

# NW Bicester Masterplan

Access and Travel Strategy  
Appendices





A2Dominion

NW Bicester Masterplan

Appendix 1 – Access Strategy Options

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## A2Dominion

## NW Bicester Masterplan

### Appendix 1 – Access Strategy Options

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# 1 Overview

The purpose of this Appendix is to discuss the options for access to and within the NW Bicester development and establish the preferred strategy. The agreed strategy as a result of consideration of this note has informed the masterplan development together with setting principles for the assessment of traffic impact to be contained in the Transport Assessment and Framework Travel Plan for subsequent planning applications.

This note sets out the options for appraisal in order to determine the access strategy and provides an initial assessment of the options.

The Appendix should be read alongside Walking and Cycling Linkages (Appendix 2) and the Bus Strategy (Appendix 3).

## 1.1 Bicester Policy and Strategy Context

In considering the Access Strategy, reference has been made to the relevant documents that set out current policy for access for Bicester as a whole as well as set the context for NW Bicester.

The **Cherwell District Council Local Development Framework** Policy Bicester 1 includes the comment that: *'Access and Movement– appropriate crossing of the railway line will be incorporated into the Masterplan to provide access and integration across the NW Bicester site'*. This issue will thus need to be considered in formulating the access strategy. The policy also seeks to achieve *'Maximisation of the transport connectivity in and around the site'* and states that the following will be required:

*'Contribution to capacity improvements to the surrounding road networks consistent with the requirement of the Eco town PPS to reduce reliance on the private car, and a high level of accessibility to public transport services, improvements to facilities for pedestrians and cyclists and the provision of a Travel Plan to maximise connectivity with existing development'*.

Policy INF 1 on infrastructure provision also states that: *'Development proposals will be required to demonstrate that infrastructure requirements can be met including the provision of transport.'*

Paragraph D.22 states that *'In Bicester, the NW Bicester eco-town proposals ('Policy Bicester 1: North West Bicester Eco-Town') involving the development of 5,000 homes and jobs requires...sustainable transport... The delivery of the proposed Bicester south east relief road is fundamental to the strategy for Bicester.'*

Table 13 of the Infrastructure Chapter of the Local Plan is extracted as Figure 1.1 below and sets out requirements for transport in Bicester. In terms of the access strategy, the key elements are:

- Proposed Phase 2 improvements to the M40 Junction 9;
- Road network, cycle and walking improvements (as yet unspecified);
- Various highways improvement schemes; and
- SE Link Road.

Many of these elements remain under discussion and to an extent the work undertaken for NW Bicester will inform discussions as well as address the outcomes.

Figure 1.1 Transport Infrastructure for Bicester (Table 13 of LDF)

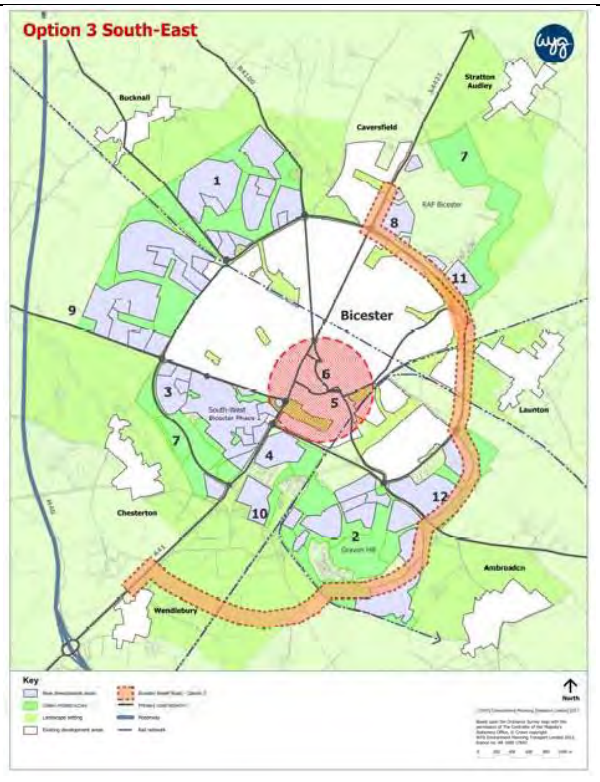
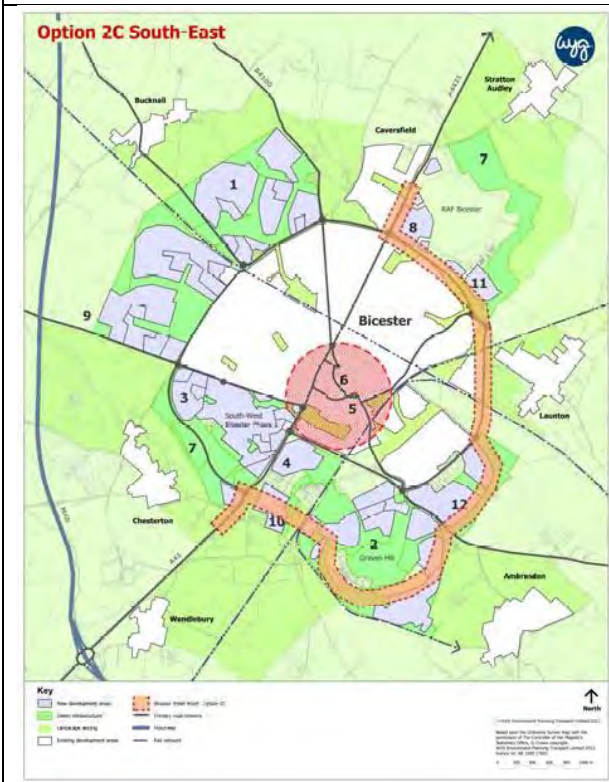
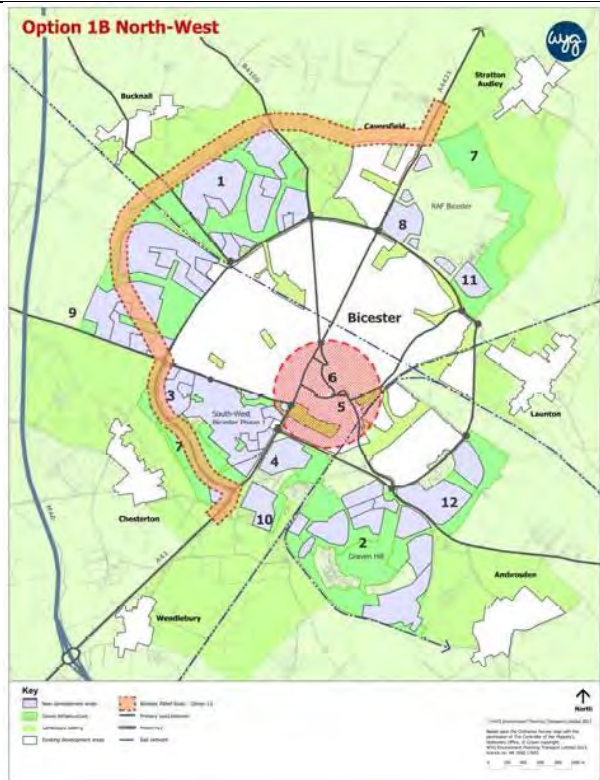
Requirement/ Projects	Phasing	Priority	Policy Linkage	Funding (status and cost if known)	Responsible body	Partners	Current Status
<b>Transport</b>							
Motorway Junction Improvements (M40 Junction 9)	Phase 1 complete Phase 2 tbc	Wider benefit	SEP Policy T14 LTP  Local Plan 'Policy Bicester 4: Bicester Business Park'	TBC	DfT	OCC Highways Agency	Phase 1 complete  'Pinchpoint' Bid being made for Phase 2
Remote Park and Ride at Bicester	Associated with development of SW Bicester	Wider Benefit	LTP  Local Plan 'Policy Bicester 3: South West Bicester Phase 2'	TBC	OCC	CDC Bus operators	This will help reduce pressure on the A34 by encouraging local journeys from Bicester to Oxford to be made by Park and Ride
Road network, cycling and walking	2006-2031	Wider benefit	Local Plan 'Policy SLE 4: Improved Transport and Connections'	Not known	OCC	CDC	Further discussion with OCC required
Travel Planning Initiatives	2010-2031	Local benefit	Eco Town PPS  Local Plan 'Policy Bicester 1: North West Bicester Eco-Town'	Eco town start up funding and developer contributions	OCC	DfT	Commenced with 'Eco-Bicester' demonstration project and continuing with exemplar project and masterplanning for wider NW Bicester development
Various highways improvement schemes	2006-2031	Wider benefit	LTP BicITLUS Developer Contributions SPD	Public funding and Developer contributions	OCC	CDC	Further discussion with OCC required
<b>Other</b>							
Including SE Relief Road			Local Plan 'Policy SLE 4: Improved Transport and Connections'				
East West Rail	Post 2016	Wider benefit	SEP Policy T11 LTP  Local Plan 'Policy SLE 4: Improved Transport and Connections'	Public/Private sector	DfT	East West Rail Consortium	Improved connections at Bicester will assist with delivery of East West Rail  <a href="http://www.eastwestrail.org.uk">www.eastwestrail.org.uk</a>
Project Evergreen 3	Estimated 2014	Wider benefit	LTP  Local Plan 'Policy SLE 4: Improved Transport and Connections'	TBC	Chiltern Railways DfT	Network Rail	Implementation of scheme anticipated in 2014 depending on outcome of the Transport and Works Act Inquiry  <a href="http://www.chiltern-evergreen3.Org.uk">www.chiltern-evergreen3.Org.uk</a>

Cherwell DC has also produced a draft masterplan for Bicester (consultation draft in September 2012) to eventually form Supplementary Planning Guidance. The Masterplan in draft includes for 'a transport and movement strategy that will provide a strategic road on the eastern side of town for through traffic and enable improved connectivity between the neighbourhoods and town centre.'

The document includes for a public transport route within the NW Bicester site which crosses the railway, forming a single loop for bus services.

Following the consultation on the draft Bicester Masterplan, Oxfordshire County Council has assessed options for the perimeter road and this includes three options in concept, as included below for information. Clearly Option 1B if taken forward would have a major impact on the NW Bicester Masterplan and thus is considered in this note.

**Figure 1.2– Options Considered by Oxfordshire County Council for the Bicester Perimeter Road**



## 2 Access Options

A range of access options have been considered in order to arrive at an agreed transport strategy, some work in tandem, others are mutually exclusive. The options are shown indicatively on the drawings referred to in each section. It should be noted that all options were drawn in concept in the absence of topographical data.

### 2.1 Walking and Cycling Access

Walking and cycling connections from the site to the rest of Bicester are discussed in Technical Note 3 Walking and Cycling Links. This includes a railway underpass in the centre of the site for pedestrians and cyclists and a walking and cycling route connecting to the footpath east of the railway towards the town centre. These options are not discussed further in this paper.

### 2.2 Bus Access Options

An option was initially developed for a bus only link in the centre of the site. This option involved providing a bridge over the railway approximately midpoint north-south in the Masterplan site, designed to be used by buses, taxis, emergency vehicles, cyclists and pedestrians. The Bus Strategy Technical Note (6) however discusses the advantages and disadvantages of different routes and concludes that there are better ways of providing a bus service connection. Such a bus only link in the centre of the site would be high in capital costs, not provide a good level of accessibility to bus services and be a relatively inflexible means of providing a bus route.

This option has therefore not been further explored as an access option in this technical note.

### 2.3 Highway Access Options

A range of options for highway access have been considered. It should be noted that these options would also provide for walkers and cyclists alongside the routes and provide a route for buses.

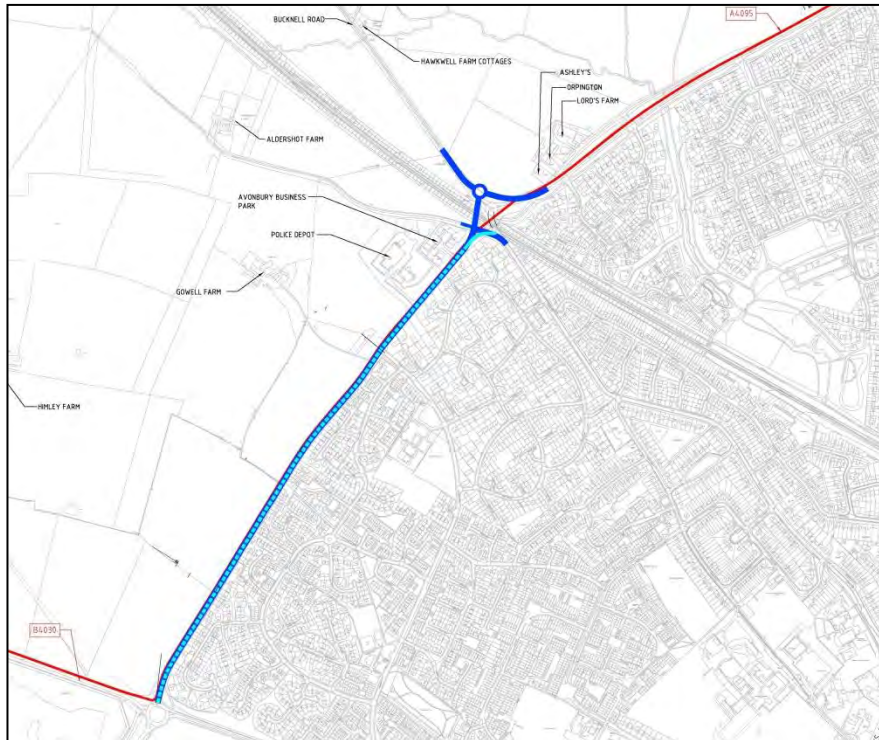
#### 2.3.1 Do-minimum – Improvements to Howes Lane

The do-minimum option involves improving the existing alignment of Howes Lane to provide a standard single carriageway width with right turning facilities and an adjacent footway/cycleway. With the do-minimum the Howes Lane/ Lords Lane junction would be upgraded, as proposed for the Exemplar. It is assumed that the route would be designed for a 30 mph speed limit.

#### 2.3.2 Option 1 – Improvements to Howes Lane and new Railway Under-pass

Option 1 involves improving the existing alignment of Howes Lane to provide a standard single carriageway width with right turning facilities and an adjacent footway/cycleway. A new railway bridge would be constructed to remove the need for a priority junction of Howes Lane/ Bucknell Road. A new junction arrangement of Bucknell Road/ Howes Lane/ Lords Lane would be required and a four arm roundabout is suggested. In addition, it is assumed that Bucknell Road from the south would tie in to a priority junction with Howes Lane. It is assumed that the route would be designed for a 30 mph speed limit.

**Figure 2.1: Option 1 Improvements to Howes Lane and new Railway Under-pass**



Details of the scheme in the vicinity of the railway are shown in concept in Figure 2.2. As information is limited at present on levels in the area, the layout shown on a previous plan by Babbie (as supplied by Oxfordshire County Council) has been used as the basis for this option.

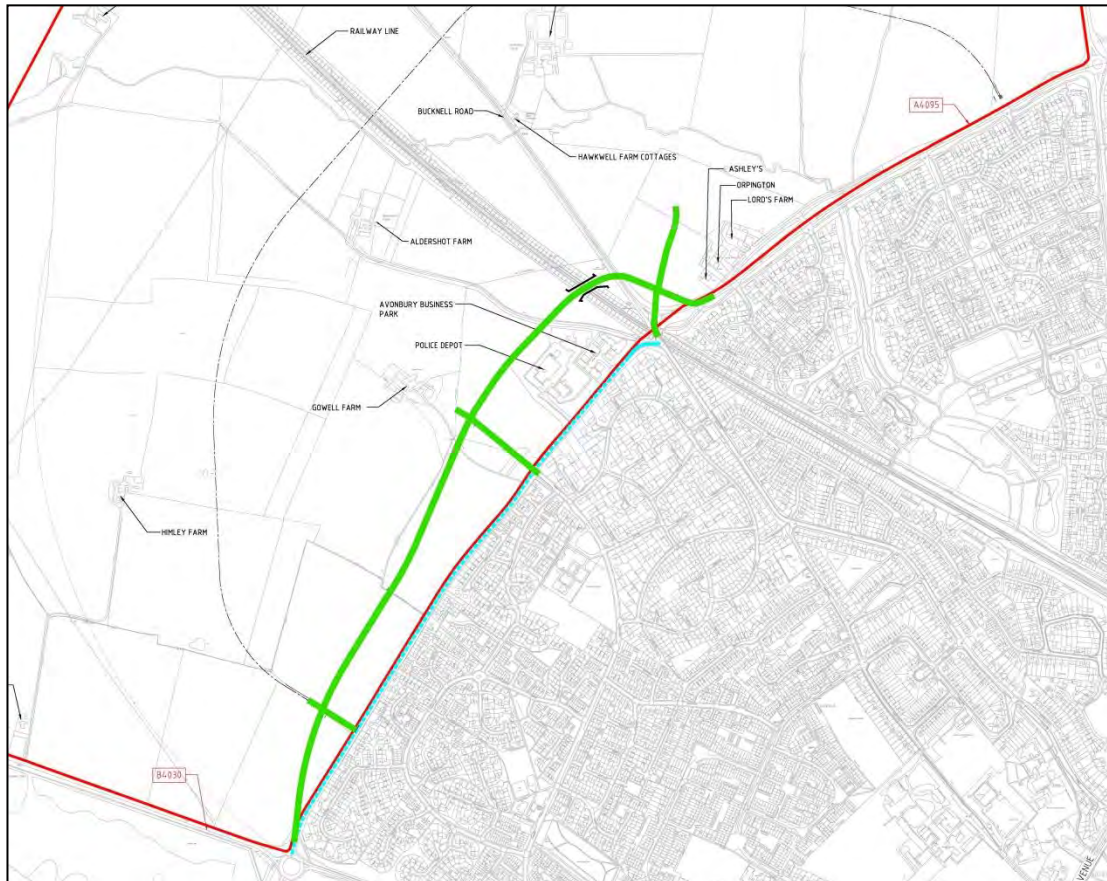
**Figure 2.2: Option 1 Howes Lane/ Lords Lane Roundabout Junction and new Railway Under-pass**



### 2.3.3 Option 2 – New Howes Lane and new Railway Under-pass

Option 2 involves a new Howes Lane approximately 80 metres to the north as a single carriageway with right turning facilities and an adjacent footway/cycleway. A new railway under-pass/ bridge would be constructed to remove the need for a priority junction of Howes Lane/ Bucknell Road. This is illustrated in concept in Figure 2.3. Note that this was the form of Option 2 as presented in consultation in September 2013.

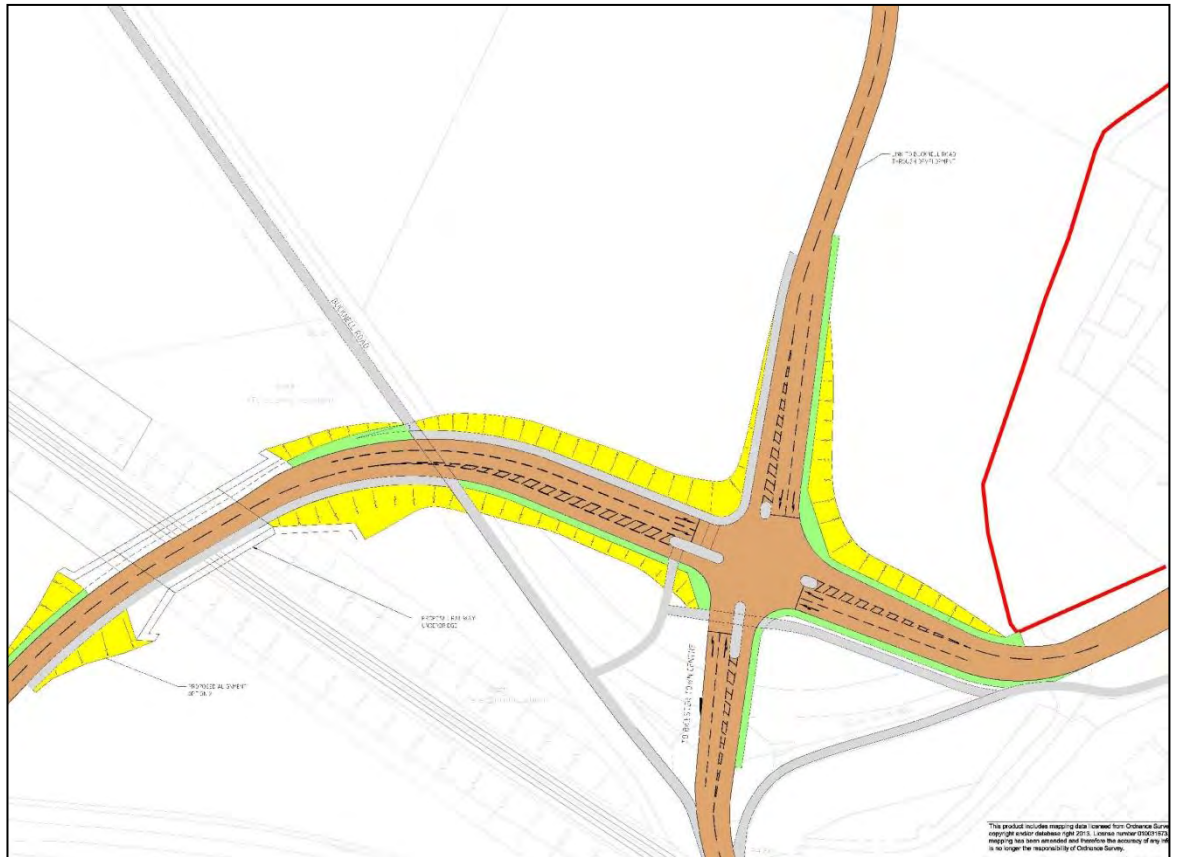
**Figure 2.3: Option 2 New Howes Lane and new Railway Under-pass**



A new junction arrangement of Bucknell Road/ Howes Lane/ Lords Lane would be required and a four arm traffic signalised junction is suggested to ensure strong at grade connections for pedestrians and cyclists. It is assumed that the route would be designed for a 30 mph speed limit. The northern arm could be for buses only with this arrangement, but the drawing shows it for general traffic diverted from the existing alignment into the Masterplan site to reduce movements to Bucknell village. The existing lane could become a cycle route for the section immediately to the north of the junction.

The existing Howes Lane would no longer be required for its full length and the area of land to the south of the realigned road could be developed as part of the masterplan. Details of the scheme in the vicinity of the railway are shown in concept in Figure 2.4.

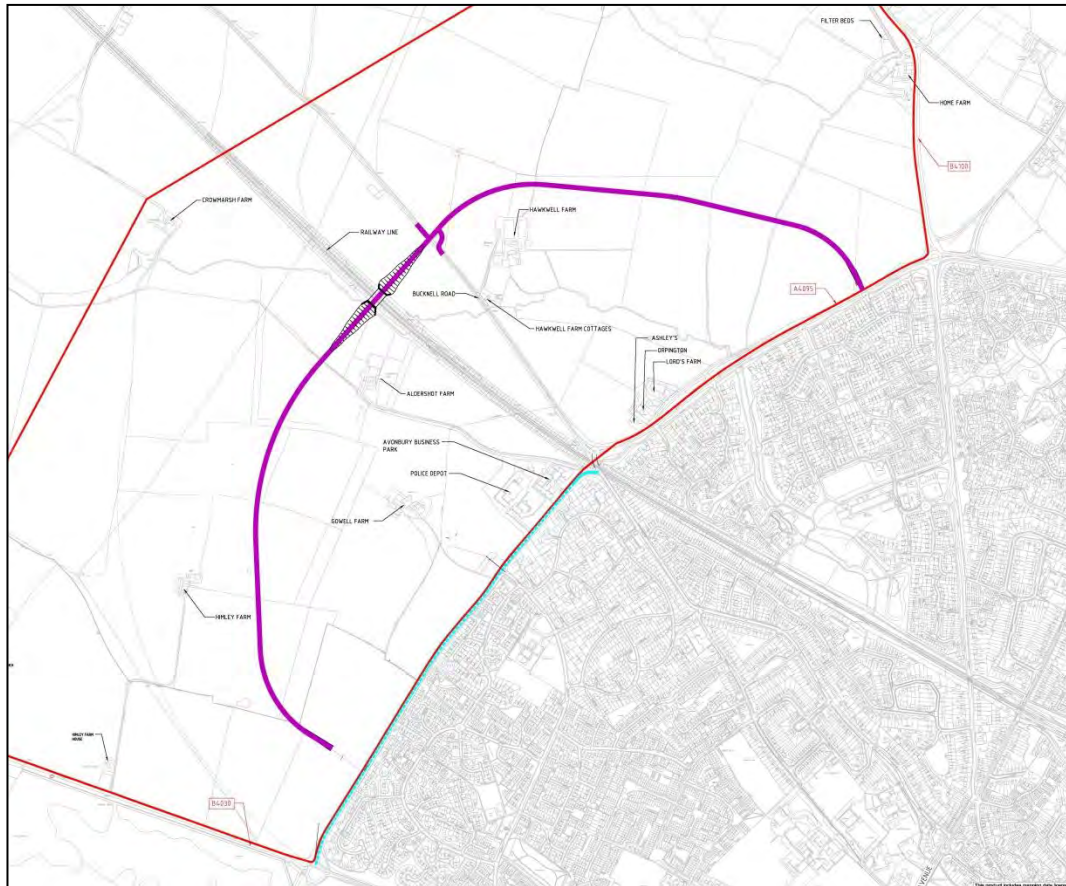
Figure 2.4: Option 2 Howes Lane/ Lords Lane Junction and new Railway Under-pass



### 2.3.4 Option 3 – Central access road with bridge over the railway

This option involves providing a bridge over the railway approximately midpoint north-south in the Masterplan site, designed to be used by all traffic. With Option 3, it is anticipated that the do-minimum, Option 1 or 2 would not be required (although parts of Howes Lane would require upgrading as part of the link into the site). The central section of the option is shown in concept in Figure 2.5.

Figure 2.5: Option 3 Central access road



### 2.3.5 OCC Strategic Network Option

In addition to those options above for access to the Masterplan, Oxfordshire County Council has considered options for the Bicester perimeter road including an option around the perimeter of the Masterplan site. The report on this assessment (January 2014) concludes that a route in the NW does not have the extent of benefits as a route in SE Bicester and thus a peripheral route in this area is not considered further.

### 2.3.6 Highway Access Option Relationships

Consideration has been given to which of the highways options may need to be implemented together. The Do Minimum, Option 1 and Option 2 are mutually exclusive. The improvements to Howes Lane, suggested as part of a Do Minimum, would be likely to be needed alongside an Option 3.



## 3 Option Appraisal

### 3.1 Overview of Appraisal

The previous section set out highways access infrastructure options. An initial high level appraisal of the options has been undertaken by the Design Team and members of the Transport Workstream. The initial options and the appraisal were also presented at a Stakeholder Workshop on 25<sup>th</sup> September 2013. The overall likely advantages and disadvantages of each option have been considered, in terms of:

- Impacts on the Masterplan for the development;
- Connectivity;
- Sustainable travel implications;
- Traffic implications;
- Landscape and visual impacts;
- Biodiversity impacts;
- Public and community issues;
- Technical and operational feasibility; and
- Costs and Deliverability.

In summary, the site master planners comment that 'the test of any access strategy is whether it achieves the right balance between access to achieve local integration and cohesive communities along with wider access objectives'.

The following sections set out the appraisal of each of the options.

### 3.2 Do Minimum

#### Impacts on the Masterplan for the development

The do minimum would not assist travel to the development, although it would not constrain the Masterplan.

#### Connectivity

The do minimum would provide poor connectivity between the two parts of the site, given that it would rely on the existing road under the railway which is poorly aligned. There would be no other crossing of the railway line.

#### Sustainable travel implications

This option would not provide any advantage to buses over other traffic and buses would experience delay by significant congestion. Pedestrians and cyclists would see some benefit on the existing situation as Howes Lane is widened as there are currently no cycling facilities or a footway along most of Howes Lane.

#### Traffic implications

This option would not accommodate future traffic levels from the Masterplan site. There would be significant congestion in the vicinity of the Howes Lane/ Lords Lane junctions.

## Landscape and visual impacts;

The do minimum improvements would be seen in the context of new urban development (unlike a bypass, for example) and are therefore not likely to present significant landscape and visual issues in their own right.

## Biodiversity impacts

This option would result in the loss of long sections of hedgerow (approximately 1 km of hedgerow) half of which has been classified as species-rich. However, most of this hedgerow is located alongside Howes Lane and therefore the fauna that these hedgerows support is already adversely affected by existing traffic movements. Howes Lane is on the edge of the existing residential development and the hedgerows are of limited value as a wildlife corridor. Overall, it is considered that the hedgerow loss could be compensated for with a combination of hedgerow translocation and new planting alongside the new roadside.

## Public and community issues

This option is unlikely to be acceptable given the existing congestion issues along the Howes Lane/ Lord's Lane corridor. Communities in the vicinity would experience significant delay and disruption from the additional traffic. The congested route would be likely to encourage more traffic to route through Bucknell to avoid Howes Lane as a route to the M40.

## Technical and operational feasibility

The Do Minimum is likely to be technically feasible, given the limited improvements suggested. However the road network would not operate effectively.

## Deliverability

The option would be expected to only require land as part of the Masterplan. It is not considered deliverable however in that it would not mitigate traffic congestion issues at the Howes Lane/ Lord's Lane junctions and thus is highly unlikely to gain consent for the development.

# 3.3 Option 1

## Impacts on the Masterplan for the development

Taming the existing Howes Lane and Lords Lane ring road with improved crossing and pedestrian environment is a key issue to be tackled in the NW Bicester masterplan to integrate the masterplan with Bicester.

The masterplan approach has been therefore to strongly prefer options such as Option 1 which use the existing ring road and 'tame' it by locating access to the new developments opposite/adjacent access to the existing residential areas so all new spine roads have integrated mixed mode access and crossings. The issue of improving the junction with existing Howes Lane and Lords Lane and railway crossing requires further study, with the balance of opportunity to improve connections between the existing town and extended settlement weighed.

## Connectivity

The option would provide improved connectivity between the two parts of the site and the do minimum, given that the road layout would be redesigned to improve capacity and provide better walking and cycling linkages. A roundabout arrangement tends to deter pedestrian/ cyclist movements across junction arms and a traffic signalised arrangement might need to be considered.

## Sustainable travel implications

This would provide cyclist and pedestrian facilities along the route and the slow speed would be conducive to movements across the road. It would enable bus movements to link the two parts of the site in a single loop (as preferred in the Bus Strategy, Technical Note 6) although there would be limited bus priority over other traffic.

## Traffic implications

Whilst assessment would be needed to demonstrate that this scheme would resolve the issues at the Howes Lane/Bucknell Road junction, past modelling of a similar arrangement showed that the removal of the current arrangement and use of larger roundabout provided appropriate capacity. A straighter alignment to bring the road back into Lord's Lane further along may be needed to avoid repeating the problems with visibility with a new skewed tunnel and junction. There may still need to be treatments along the route to deal with vehicles exiting from minor junctions.

## Landscape and visual impacts

This option would be seen in the context of new urban development (unlike a bypass, for example) and is therefore not likely to present significant landscape and visual issues in its own right.

## Biodiversity impacts

This option would have similar impacts on biodiversity as the Do Minimum scenario. However, it would result in the loss of a greater length of hedgerow (almost 2 km, including species-rich hedgerows). Again the effects on wildlife corridors would be minimal since the route for the most part is located close to existing roads. Overall, it is considered that the hedgerow loss could be compensated for with a combination of hedgerow translocation and new planting alongside the new roadside.

## Public and community issues

This option may be acceptable to the community, although the immediate impacts on residents on the south side of Howes Lane close to the proposed new underpass and the business uses at Avonbury Business Park, could give rise to concern. The route to Bucknell village would remain as at present with no discouragement to using the route to join the M40 at Junction 10.

## Technical and operational feasibility

A full topographical survey and detailed design would be needed, together with full consultation with Network Rail, to confirm if this option is technically feasible. The option would involve improving the existing route and a new railway bridge in close vicinity to the existing junction. Construction impacts on traffic would need careful consideration.

## Deliverability

Part of the Avonbury Business Park could be affected by this option, although the impact would be likely to be minor and not impact on buildings or access. The option would need the consent of Network Rail and this is a significant risk to deliverability.

## 3.4 Option 2

### Impacts on the Masterplan for the development

Taming the existing Howes Lane and Lords Lane ring road with improved crossing and pedestrian environment is an issue to be tackled in the NW Bicester masterplan to integrate the

masterplan with Bicester. The masterplan approach has been therefore to strongly prefer options such as Option 2 which use the existing ring road and tame it by locating access to the new developments opposite/adjacent access to the existing residential so all new spine roads have integrated mixed mode access and crossings. Along Howes Lane Option 2 to create a new spine road 80 -100m west and create new development on both sides as an urban route rather than a ring road would provide significant masterplan benefits.

With this option, a roundabout junction of Howes Lane and Lords Lane was initially considered, but a traffic signalised junction is now shown, reflecting comments by CABI on the need to provide good quality at grade pedestrian and cycling routes in this area.

## Connectivity

The option would provide improved connectivity between the two parts of the site and the do minimum, given that the road layout would be redesigned to improve capacity and provide better walking and cycling linkages. It would be further NW along the railway than the Do Minimum or Option 1, thus offering slightly reduced distances between facilities on each side of the railway. With this option, a roundabout junction of Howes Lane and Lords Lane was initially considered, but a traffic signalised junction is now shown, reflecting comments by CABI on the need to provide good quality at grade pedestrian and cycling routes in this area.

## Sustainable travel implications

The option would facilitate a one loop bus service and with traffic signals, provide the opportunity for the junction to afford some priority to bus movements. High quality at grade cycling and walking connections can be designed in from the beginning given that the western half of the route would be a new alignment. This could also offer the opportunity of getting rid of the negative feeling of walking / cycling past the backs of houses along Howes Lane.

## Traffic implications

Whilst assessment would be needed to demonstrate that this scheme would resolve the issues at the Howes Lane/Bucknell Road junction, past modelling of a similar arrangement showed that the removal of the current arrangement provided appropriate capacity. There may still need to be treatments along the route to deal with vehicles exiting from minor junctions.

## Landscape and visual impacts

The option would be seen in the context of new urban development (unlike a bypass, for example) and is therefore not likely to present significant landscape and visual issues in its own right.

## Biodiversity impacts

Although this route option would involve the loss of a shorter length of hedgerow compared to the Do Minimum and Option 1 it does involve the fragmentation of thirteen hedgerows. Like the previous options, this option is close to the existing road (Howes Lane) and therefore the effects on wildlife corridors would be minimal. Overall, it is considered that the hedgerow loss could be compensated for with a combination of hedgerow translocation and new planting alongside the new roadside.

## Public and community issues

This option could be viewed as beneficial to existing residents in the vicinity of the development as the new alignment would place the main traffic route further away from residents in the area south east of Howes Lane. The option would pass to the north of the Avonbury Business Park which could be served via its existing access on Howes Lane, separate from the main through traffic route.

## Technical and operational feasibility

A full topographical survey and detailed design would be needed, together with full consultation with Network Rail, to confirm if this option is technically feasible. The option would involve improving the existing route and a new railway bridge in close vicinity to the existing junction. The construction impacts would be easier to manage than with Option 1 given that the route could be constructed largely off line whilst the existing route remains open for traffic.

## Deliverability

The option would need the consent of Network Rail and this is a significant risk to deliverability. In terms of phasing, it can be built off line whilst the existing route remains, but would be likely to need to be delivered to facilitate significant levels of development on the east side of the railway and this would need to be taken into account in land/ development phasing.

## 3.5 Option 3

### Impacts on the Masterplan for the development

Option 3 would replace part of Howes Lane and Lords Lane as a strategic ring route for the development with a new route further north west in the centre of the NW Bicester masterplan.

This idea could be seen to avoid the issues above with the OCC network and could be designed in conjunction with the masterplan. It will however require a bridge over the railway and this could potentially provide a barrier to connections in other directions than the bridge given the embankments and height of the railway. It will also need to be tied in at grade to Bucknell Road.

It is considered simplistic to assume that a new ring route such as Option 3 would allow integration of the urban extension with the existing town. The best urban and rural places are mixed mode integrated access where the strong presence of pedestrians, residents and workers provides natural surveillance and places a responsibility on all access users to reduce speed and share spaces. The existing residents use Howes Lane and Lords Lane for access so it will need to be integrated into the masterplan and it is simplistic to think these roads can just be made pedestrian routes if the replacement spine road is 600metres further west.

## Connectivity

The option would provide strong connections between the two parts of the site. It would be further NW along the railway than the other options, thus potentially offering slightly reduced distances between facilities on each side of the railway. However, the through traffic route would also pass through the development and this could impact on the quality of connections across the route in the centre of the development.

## Sustainable travel implications

The option would facilitate a one loop bus service. It would also provide a walking and cycling connection in the centre of the site. High quality cycling and walking connections can be designed in from the beginning. The analysis contained in the bus strategy technical note however, identifies that a central spine route would not be within 400 metres walking distance of significant parts of the site and thus would not offer the best solution as a bus route.

## Traffic implications

Traffic modelling has not been undertaken on this option. The degree to which it will offer an improvement for traffic will depend on how Howes Lane/ Lord's Lane is used alongside this route. If this remains a through route, then the link road in Option 3 may mainly provide for the development traffic, leaving the existing roads with significant traffic levels and as a barrier to

movement. The dominance of traffic across the site may be increased. It may help the problems for minor accesses onto Howes Lane/ Lord's Lane but it would need to be demonstrated that this would remove the Howes Lane /Bucknell Road junction problems.

## Landscape and visual impacts

Option 3 would involve a significant elevated bridge structure which has the potential to form obtrusive elements in the local landscape/views.

There is potential (and a need) to plant bridge embankments (suitable earthworks design required), thus softening/screening the proposals and reducing the longer term landscape and visual impacts - if this option is pursued.

## Biodiversity impacts

The impacts that this option could have on biodiversity would be the fragmentation of 14 hedgerows (including those classified as species-rich), the loss of small areas of plantation woodland and the fragmentation of the stream corridors (the River Bure and a tributary). The stream corridors are a wildlife corridor that is used by commuting and foraging bats, thus the bridges would need to be designed with care to ensure that bats are able to continue to use this feature. The stream corridors are also a valuable feature used by other wildlife and therefore the river crossings would need to provide safe crossings for terrestrial species to include otters and badgers.

This route option passes within the 50 metre buffer zones associated with the two ponds on site that are used by breeding great crested newts. Mitigation measures would be required to protect newts both during the construction and operation of the road. Although the route does not affect any confirmed bat roosts it would result in the loss of mature trees that are of intrinsic nature conservation value and that have the potential to support roosting bats. The bridge over the railway line has the potential to fragment the wildlife corridor associated with the railway embankments. However, given the scale of the bridge that would be required it is envisaged that the effect on wildlife would be minimal. If this route option is selected targeted mitigation measures would be required to reduce adverse effects on European protected species (bats and great crested newts) and the adverse effects that the proposed stream crossings may have.

## Public and community issues

This option could be viewed as beneficial to existing residents in the vicinity of the development as the new alignment would place the main traffic route further away from residents in the area south east of Howes Lane. It could however intrude on views from Bucknell village and encourage more traffic through the village as it would provide a route through the site closer to the village.

## Technical and operational feasibility

A full topographical survey and detailed design would be needed, together with full consultation with Network Rail, to confirm if this option is technically feasible. The option would involve a new railway bridge in the centre of the site. The construction impacts would be relatively easy to manage given that it is away from existing routes.

## Deliverability

The option would need the consent of Network Rail and this is a significant risk to deliverability. In terms of phasing, it would need to be in place at a relatively early stage as the form of the development on both sides of the railway would be based around a central spine road. This potentially raises issues of deliverability and phasing.

## 3.6 Option Costs

At present costs are not available for the options, but costs will be developed following appraisal of the most advantageous option in terms of providing for the access needs of NW Bicester and more detailed consideration of the option.

## 3.7 Option Assessment Summary

The overview of options in the previous section has enabled the performance of options to be scored against the headings. Whilst this is simplistic, it highlights where the main costs and benefits are for each option. Scoring has been made using the sliding scale below:

Large beneficial	+++
Moderate beneficial	++
Slight beneficial	+
Neutral	0
Slight adverse	-
Moderate adverse	--
Large adverse	---

**Table 1: Option Assessment Summary**

Factor	Do Minimum	Option 1	Option 2	Option 3
Impacts on the Masterplan	0	++	+++	+
Connectivity	--	+	++	++
Sustainable Travel Implications	+	+	++	++
Traffic Implications	---	++	++	+
Landscape and Visual Impacts	0	0	0	--
Biodiversity Impacts	0	0	0	-
Public and community issues	--	0	+	0
Technical and operational feasibility	---	--	-	-
Deliverability	--	--	-	--
Costs	tbc	tbc	tbc	tbc

## 3.8 Conclusions and Recommendations

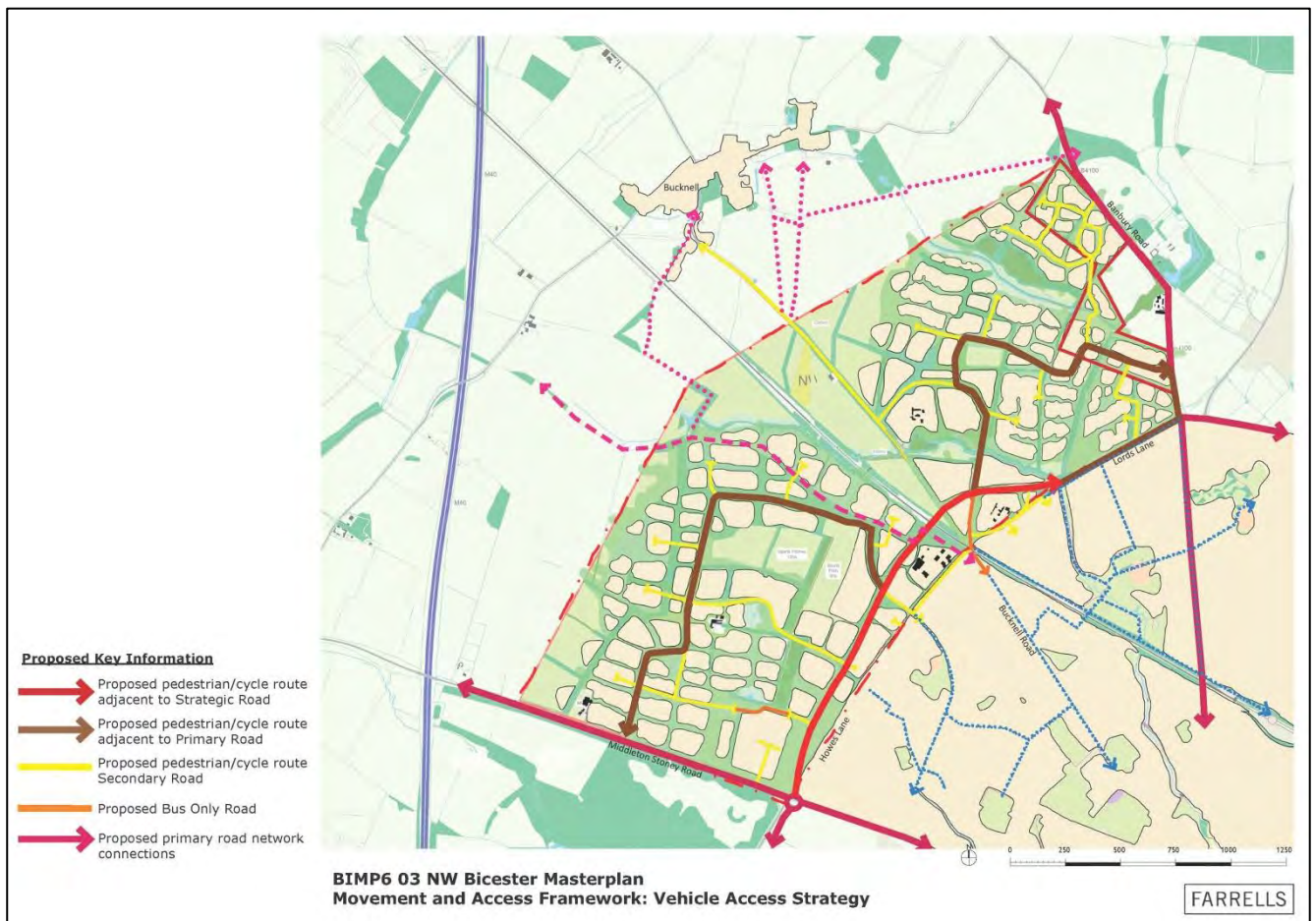
The summary indicates that of the options, Option Two potentially offered the best access strategy for the Masterplan when considering the range of factors. It was recognised however that this option needed consultation with Network Rail, traffic modelling, design and full costing before determining if it is feasible and can be delivered. Option One provides a reasonable alternative and could be considered further should issues emerge with Option Two.

As a result, topographical surveys, traffic modelling and initial discussions with Network Rail commenced and Option Two was confirmed as the access strategy for NW Bicester. The initial design work and traffic modelling, together with refinements to the masterplan, has led to the following refinements compared to the indicative layout presented in the earlier sections:

- The alignment under the railway has been straightened to avoid a skewed bridge;
- It passes to the north of Lords Farm to create a more appropriate highway alignment;
- A bus only link is proposed on the south side – traffic accessing Bucknell Road south is proposed to do so via a short section of the old Howes Lane from the west and the old Lord's Lane to the east;
- A roundabout is suggested at the junction of the old Howes Lane and Shakespeare Drive;
- Traffic travelling from Bucknell Road in the town centre will be diverted to the east on the Old Lord's Lane, then north through the masterplan, thus aiming to reduce the attractiveness of the route for through traffic.

This proposed layout is presented within the Masterplan and shown in the Vehicular Access Strategy in Figure 3.1.

Figure 3.1 Vehicular Access Strategy







A2 Dominion

NW Bicester Masterplan

Appendix 2 – Walking and Cycling Linkages

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## A2 Dominion

## NW Bicester Masterplan

### Appendix 2 – Walking and Cycling Linkages

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<b>Report No</b>	003-UA005241-UE31R-04	
<b>Date</b>	14 <sup>th</sup> March 2014	

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# 1 Introduction

## 1.1 Overview

The purpose of this Appendix is to inform the discussions on the existing walking and cycling infrastructure within the NW Bicester development and provide recommendations for future improvements in order to encourage walking and cycling to and from the development.

Hyder Consulting has undertaken a walking and cycling audit of the area between NW Bicester and the town. Each area has been surveyed and the following sections detail the results of the site work. These are Hyder's views and will be subject to comments of the County Council and local stakeholders. It should be noted that not all the routes audited would be well used by NW Bicester residents and thus the measures suggested are for general improvements to walking and cycling, not necessarily those that are needed to serve the development.

## 1.2 Policy Context

This section sets out the key documents providing policy guidance on walking and cycling with relevance to Bicester and the NW Bicester development.

### **National Planning Policy Framework (March 2012)**

The National Planning Policy Framework sets out the Government's planning policies for England and how these are expected to be applied. One of the core planning principles is to 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. In relation to larger scale residential developments, where practical, key facilities such as primary schools and local shops should be located within walking distance of most properties.

### **Planning Policy Statement: Eco-Towns – A Supplement to PPS1 (2009)**

The document sets out Government objectives relating to sustainable development and provides minimum standards for new developments for developers and local planning authorities. In relation to transport, travel in eco-towns should support people's desire for mobility whilst achieving the goal of low carbon living. Sustainable modes, such as walking and cycling, must be given priority over private cars. To achieve this, homes should be within ten minutes' walking of frequent public transport and neighbourhood services, and employment opportunities should be easily reached by walking or cycling. Space should also be afforded to green infrastructure, which should lend itself to safe walking and cycling routes.

### **Oxfordshire Local Transport Plan 2011-2030 (Revised April 2012)**

The Oxfordshire Local Transport Plan (LTP) sets out objectives and plans for developing transport in their area from 2011 to 2030. In 2009, Bicester was designated as one of four national 'eco-town' locations. The strategy seeks to build on this designation to deliver transport improvements, with a focus on sustainable travel.

It is recognised that despite the town having an extensive pedestrian network, it can be difficult to navigate, especially for visitors. Therefore a joined up network is required with signage to residential areas, local services, schools, employment and the village centre. Furthermore, adequate footway widths and surfaces should be provided in conjunction with formal crossing

points. The LTP sets out the following policies in relation to the walking and pedestrian environment:

**Policy BI1 – Oxfordshire County Council will improve facilities for pedestrians by providing better signage and improved crossing points.**

**Policy BI2 – Oxfordshire County Council will work with Cherwell District Council and developers to ensure new developments are designed to promote permeability on foot both within the site and to link with the existing settlement.**

**Policy BI3 – Oxfordshire County Council will ensure urban footways join up with rights of way and rural footpaths.**

The strategy recognises that cycling infrastructure in Bicester could be improved in terms of routes and cycle parking at key destinations. Limited publicity of cycling routes exists in Bicester despite the entirety of the town currently being within a 15 minute cycle ride of the town centre. The strategy sets out the following policies in relation to cycling:

**Policy BI4 – Oxfordshire County Council will develop and promote a series of joined up cycle routes to link residential areas with the town centre and key local facilities and improve the town centre to provide improved facilities for cyclists.**

**Policy BI5 – Oxfordshire County Council will work with Cherwell District Council and developers to ensure new developments are designed to promote permeability by bike both within the site and to link with the existing settlement.**

**Policy BI6 – Oxfordshire County Council will improve connections to the rights of way network particularly where urban cycle routes meet rural rights of way.**

**Policy BI7 – Oxfordshire County Council will develop safe and secure cycle parking within the town centre and at key destinations.**

### **Cherwell Proposed Submission Local Plan**

Cherwell District Council is currently preparing the Cherwell Local Plan and additional supporting guidance. The Proposed Submission Local Plan went out for initial consultation in August 2012, with further consultation regarding changes made held between March and May 2013. It sets out the broad planning framework for meeting the future needs of Cherwell and would replace the Cherwell Local Plan 1996. A number of policies in relation to walking and cycling are set out below in order to provide context for future development in the area:

**Policy SLE 2: Securing Dynamic Town Centres** recognises the developments can be made accessible and well served by a range of transport modes, including by walking and cycling.

**Policy BSC 8: Securing Health and Well-Being** recognises the important of promoting healthy lifestyles by providing facilities such as local open space to allow walking and cycling. Furthermore, it states that the Council will work with the local community to provide safe and accessible environments.

**Policy ESD 18: Green Infrastructure** seeks to ensure that green infrastructure network consideration is integral to the planning of new development. It states that proposals should maximise the opportunity to maintain and extend green infrastructure links to form a multi-functional network of open space, providing opportunities for walking and cycling, and connecting the towns to the urban fringe and the wider countryside beyond.

The Local Plan contains policies for Cherwell's places, with Bicester being one of the key areas. It contains Policy Bicester 1: North West Bicester Eco-Town which sets out the requirement for significant green infrastructure provision including new footpaths and cycleways, enhancing green modal accessibility beyond the site to the town centre and Bicester Town Rail Station,

adjoining developments, and linking the development to the existing Public Rights of Way Network.

## **Bicester Masterplan – Supplementary Planning Document – Consultation Draft August 2012**

The Bicester Masterplan Draft Supplementary Planning Document will accompany the Cherwell Local Plan in establishing a long term vision for the town. It forms a set of strategic objectives to guide development, a series of masterplans to demonstrate how the objectives are achieved, and the key policies and actions to deliver the planned changes.

In relation to walking, a number of the masterplan proposals for the town provide the opportunity to further build upon the pedestrian and cycling linkages across the town, particularly by improving the east-west walking routes. This seeks to link new development with the existing town and to improve links to and from existing employment. It is recognised that NW Bicester will be more than 2.0km from the Launton Road employment area, from Bicester Town Railway Station and also areas of the Town Centre, resulting in the potential for a greater number of journeys by cycling.

The future strategy for pedestrian and cycle movement in Bicester consists of three main elements:

- The provision of new links, particularly to the major development areas to the north-west and the south of the town;
- The provision of new pedestrian/cycle infrastructure to better connect key areas of the town centre; and,
- The securing of new green links within proposed development sites on the outskirts of the town to connect with existing rights of way network, providing a series of leisure / health walks.

### **1.3 Walking and Cycling Audit**

A detailed audit of the walking and cycling network in the vicinity of NW Bicester has been undertaken by the Hyder study team. The full audit is contained in Appendix A.

From the audit exercise, the following issues have emerged:

- Walking and cycling infrastructure in the Bure Park (Zone D) and Southwold (Zone E) areas is of a general high standard with more than adequate coverage. This is due to the aforementioned areas being more recent developments, with consideration for walking and cycling from the outset. Conversely, the older areas (Zone B & C) have lower quality walking and cycling infrastructure.
- Signage is generally an issue throughout Bicester. Although signage does exist in areas, more could be done to provide good quality signage which provides information on the direction of routes, the distance and time to key destinations and clarification of what non-motorised users are permitted to use routes.
- Perception of safety is an important factor for pedestrians and cyclists at all times of day. It should be ensured that street lighting is provided to routes were required to encourage travel and night. Although lighting does exist on some routes, it must be ensured that overgrown vegetation is adequately kempt to make sure that routes are well-lit. Some routes are secluded, which can add to the attractiveness of a route but conversely can detract from the attractiveness of a route in terms of perception of personal safety.

## 2 Walking and Cycling Strategy

A Walking and Cycling Strategy has been formulated with regard to local and national policy. In addition to the relevant policies, it takes into account Local Transport Notes 1/04 Policy, Planning and Design for Walking Cycling and 2/08 Cycle Infrastructure Design. Local Transport Note 1/04 sets out five core principles common to both pedestrians and cyclists, derived from the requirements for pedestrians included in *Guidelines for Providing for Journeys on Foot*, IHT 2000 (Connectivity, Conspicuity, Convenience, Comfort, and Conviviality) and the requirements for cyclists included in Cycle Friendly Infrastructure, IHT 1996 (Coherence, Directness, Comfort, Safety, and Attractiveness). The five core principles which summarise the desirable design requirements for pedestrian and cyclists set out in LTN 2/08 are that routes should be convenient, accessible, safe, comfortable and attractive.

Responding to the policy and guidance, the ingredients of the ideal walking and cycling routes will form a network which is as illustrated.



### Accessible and Integrated

Routes must go from places people live to places they wish to go in the most direct route possible. This must include access to other routes and key destinations including local centres, employment sites, public transport interchanges, education facilities and the countryside. The key destinations from the NW Bicester are considered to be:

- The town centre;
- Local centres (e.g. Bure Park, Bucknell Road)



- Primary and secondary schools (e.g. the Cooper School, Bicester Community College, Bure Park Primary School, Kings Meadow County Primary School, Southwold Primary School)
- Bicester Town and Bicester North rail stations;
- Employment sites such as Launton Road industrial estate and Graven Hill;
- Bicester Village;
- Bicester Community Hospital.

Moreover, secure and sheltered cycle parking should be provided at homes in NW Bicester and at key destinations.

Routes must also take into account future development proposals and transport initiatives.

## High Quality

Routes must be of a high quality with all-weather surfacing, well-lit and easily maintained. A maintenance strategy should be formulated to ensure that routes are kept to a high standard. Routes must be unimpeded by street furniture and vegetation.

## Safe

The safety of pedestrians and cyclists must be considered. Routes should have natural surveillance to increase the perception of safety for users. Pedestrians and cyclists should be segregated from each other where possible to minimise potential conflicts, with walking and cycling routes segregated from vehicular routes. Safety should be ensured by providing well-lit routes of adequate widths with numerous crossing points.

## Signage and Marketing

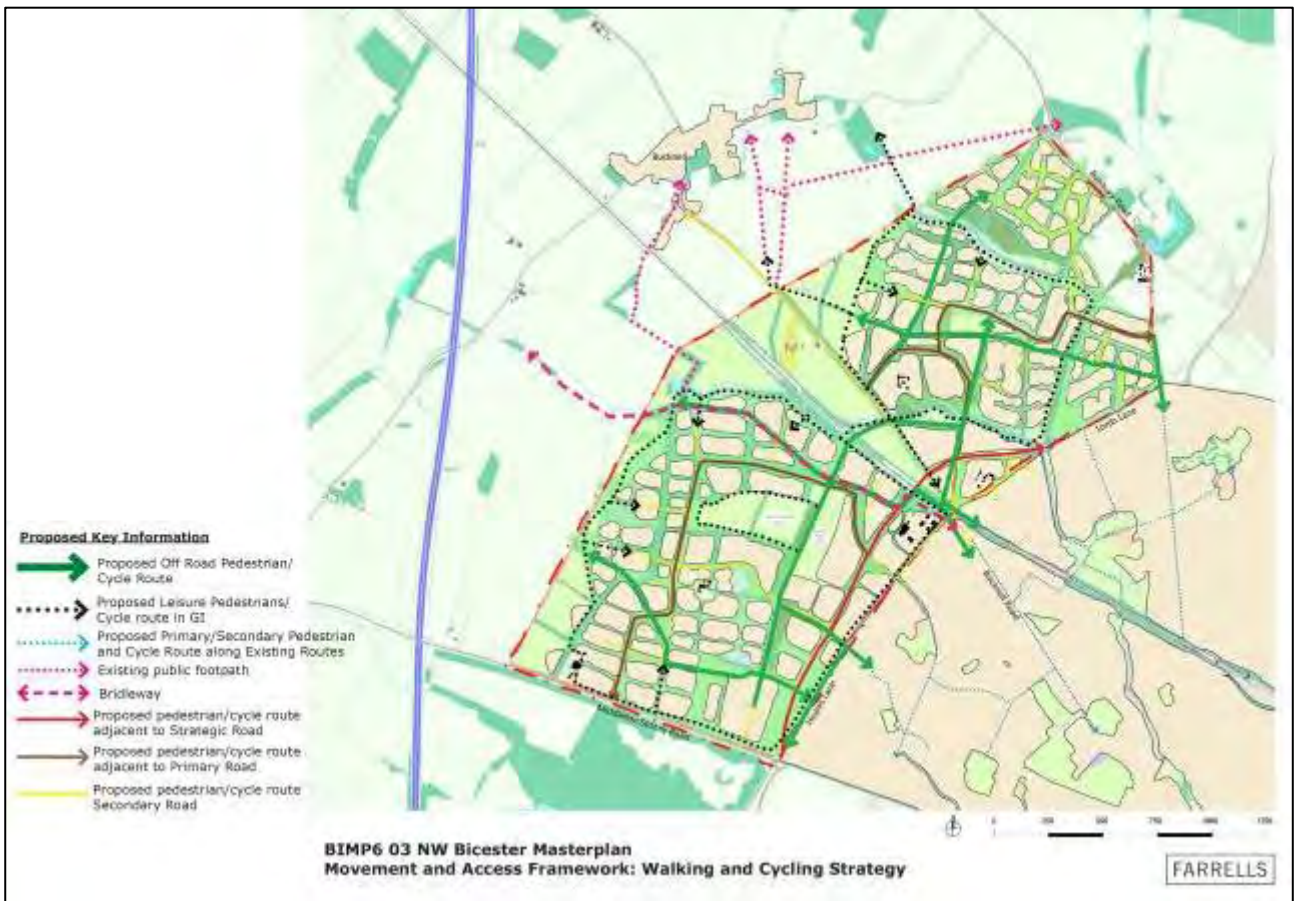
Walking and cycling routes should be branded and marketed, ensure that residents of Bicester are aware of routes in the area. Maps and signage are essential to information users on routes, destinations, directions and distances.

### 3 Masterplan Walking and Cycling Connections

It is proposed that the Masterplan internal walking and cycling routes will be of a high quality with all-weather surfacing, well-lit and easily maintained. The layout of home and routes will ensure natural surveillance to increase user safety. Where possible pedestrians and cyclists will be segregated to minimise potential conflicts, with walking and cycling routes segregated from vehicular routes. Safety of pedestrians and cyclists will be ensured by providing routes of adequate widths and with numerous crossing points.

To ensure cycle and walking routes are well used and fit for purpose, they will be split into two distinct categories. 'Direct routes' will act as commuting routes to allow direct and fast access to key local employment areas, schools, local centres and hubs. This allows for the provision of cyclists and walkers travelling to school and to work. As a contrast, a network of 'leisure routes' will be introduced, which allow more 'weekend' routes, longer meandering paths, these will tend to be more rural and will take in the arable farmland, the Bure stream and the hedgerows.

Figure 3.1 illustrates the proposed walking and cycling connections within the Masterplan.



# 4 Off-Site Walking and Cycling Connections

## 4.1 Overview

The strategy has set out the key principles to encourage walking and cycling trips to and from the NW Bicester development. Moreover, the detailed audit covers a wide range of routes between the NW Bicester and the town centre and employment areas. There are many improvements that could be made to encourage walking and cycling in this segment of Bicester, but not all would assist specifically in providing connections from the NW Bicester development and the town.

## 4.2 Recommendations

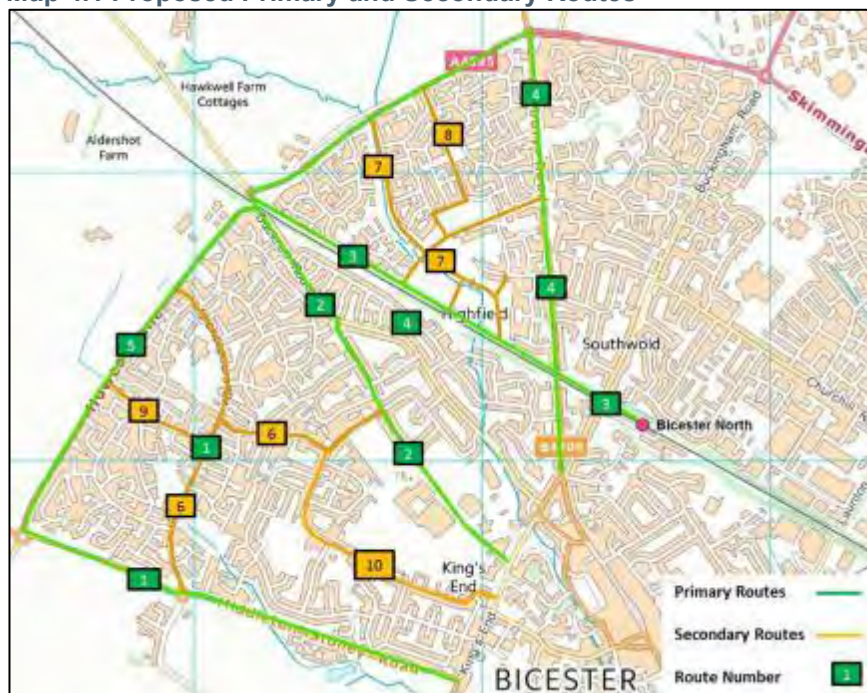
The following are overall recommendations for walking and cycling routes in Bicester:

- Provide good quality signage to deliver information on the direction of routes, the distance and time to key destinations and clarification of what non-motorised users are permitted to use routes. 'Finger signs' are suggested as they would provide users with directions and distances to key destinations in Bicester.
- Identify potential primary and secondary connections of walking and cycling routes linking the NW Bicester site to Bicester. The primary connections will be the routes which can best meet the criteria for a high quality network identified in the strategy. As part of the Travel plan, once these have been established, maps should be produced and distributed/ available online;
- Prioritise improvements to the primary and secondary connections to encourage walking and cycling from the development.

## 4.3 Summary of Routes and Crossing Locations

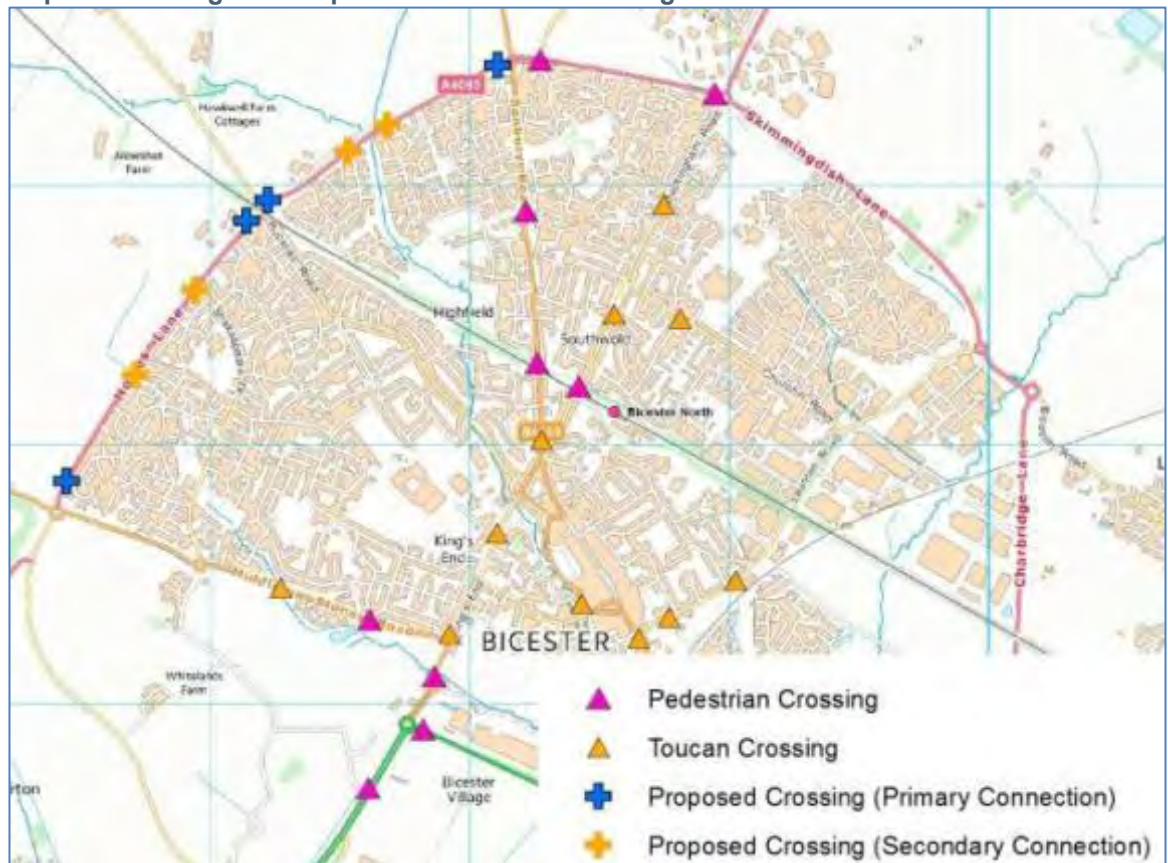
Map 4.1 below summarises the primary and secondary routes.

Map 4.1 Proposed Primary and Secondary Routes



Crossing locations for both route categories are shown in **Map 4.2**.

**Map 4.2: Existing and Proposed Pedestrian Crossings**



## 4.4 Primary Connections

Following the audit and review, the primary connections between the development and Bicester, and east-west connecting the different parts of the development, in order to encouraging walking and cycling are considered to be:

- Middleton Stoney Road – connecting the SW corner of the development to the south of the town centre, Kingsmere development and Bicester Village (**Route 1**);
- Bucknell Road to Queens Avenue via George Street (past the College and St Mary's Primary School) – connecting the central part of the site to the town centre (**Route 2**);
- Alongside the railway from Lord's Lane to Bicester North Railway Station (**Route 3**);
- Adjacent to Banbury Road – connecting the east side of the development with the town centre (**Route 4**); and
- Alongside Lord's Lane and Howes Lane – connecting the different parts of the development (**Route 5**).

**Table 4.1** identifies the opportunities that could be considered to improve each of the primary routes for NW Bicester.

In response to the principles for routes, primary connections should be:

- Segregated from traffic;
- All weather surface;

- Lit;
- The most direct routes.

**Table 4.1 – Opportunities to Consider for Improving Primary Connections**

<b>Route No.</b>	<b>Section</b>	<b>Opportunities for Consideration</b>
Route 1	B3 – Middleton Stoney Road	An off-road shared route for walking and cycling could be provided on the northern side of the road which could run parallel to Middleton Stoney Road at the western extent (Section B12). There is also a wide highway verge at the eastern extent of Middleton Stoney Road which could allow a shared surface to be installed. In the middle section the widening would require either carriageway narrowing or removal of vegetation screening from adjoining housing. However, proposals for traffic calming may improve conditions for cyclists such that an off road route may not be required.
Route 2	C5 – Queens Avenue to St Mary’s Primary School	<ul style="list-style-type: none"> <li>▪ This route could be signed and improved as a cycle route.</li> </ul>
	C6 – Shared surface past Bicester College	<ul style="list-style-type: none"> <li>▪ The section does not require improvement.</li> </ul>
	C7 – George Street	<ul style="list-style-type: none"> <li>▪ Upgrading of footways at points</li> <li>▪ Provide facilities for cyclists in traffic calming features on street.</li> </ul>
	C1 – Bucknell Road (Junction of Howes Lane to Junction with George Street)	<ul style="list-style-type: none"> <li>▪ The reconfiguration of the junctions around the railway bridge could provide an opportunity to also upgrade pedestrian facilities such as widening of the western footway around the railway bridge and continuing of eastern footway beyond the railway bridge.</li> <li>▪ Land appears to be available on the western side of the footway which could be used to widen the footway, possibly to allow a shared surface with cyclists. The extent of the widening would depend on what vegetation could be removed, particularly south of the Veterinary Centre. Space on the eastern side of the footway is also available south of the Veterinary Centre.</li> </ul>
Route 3	D1 - Route parallel to Railway	<ul style="list-style-type: none"> <li>▪ Improve signage, providing directions and travel times to other routes and locations.</li> <li>▪ Change surface to one suitable in all weather conditions and widen to accommodate cyclists.</li> <li>▪ Provide lighting where required.</li> <li>▪ Address overgrown vegetation.</li> </ul>
Route 4	D2 – Route alongside Banbury Road	<ul style="list-style-type: none"> <li>▪ Improve surface and markings.</li> <li>▪ Add signage and travel times to other routes.</li> <li>▪ Remove overgrown vegetation.</li> </ul>
Route 5	B14 – Howes Lane	<ul style="list-style-type: none"> <li>▪ Provide footpaths and cycleways as part of the development of NW Bicester.</li> </ul>
	D3 – Lord’s Lane/Southwold Lane (A4095)	<ul style="list-style-type: none"> <li>▪ Improve signage to other routes.</li> <li>▪ Explore adding crossing facilities to assist pedestrians and cyclists crossing the A4095.</li> </ul>

## Crossing Locations

Each of the primary connections requires a means of crossing the Howes Lane/ Lord's Lane corridor (which will be in use for traffic to varying degrees depending on the highway access strategy options taken forward). The anticipated crossing locations are as follows:

Route 1	Gaining access to this route will require provision of toucan crossing facilities on the western end of Howes Lane on approach to the junction with Middleton Stoney Road.
Route 2	Gaining access to this route requires provision of toucan crossing facilities in the vicinity of the railway bridge from the site to Bucknell Road, notably connecting the bridleway/ footpath on the western side of the railway across Howes Lane.
Route 3	Crossing facilities will be required in the vicinity of the east side of the railway on Lord's Lane. Options under consideration include an over bridge linking directly to the walking and cycling route on the south side from the site or crossing facilities at grade depending on access arrangements in this area.
Route 4	A toucan crossing will be provided on Lord's Lane west of the junction with Banbury Road as part of the Exemplar development.

## 4.5 Secondary Connections

The following connections are considered to be of secondary importance, but still of significance in linking the central areas on the east and west sides of the development into and through the residential areas:

- Shakespeare Drive – connecting the western part of the site south to Middleton Stoney Road and east via Blenheim Drive and Leach Road to George Street (**Route 6**);
- Routes through Bure Park nature reserve connecting to the railway route – connecting the central part of the east side of the development to the town centre (**Route 7**);
- From Lord's Lane to Lucerne Avenue through the Bure Park housing estate (as above) (**Route 8**);
- Connection from Howes Lane to Dryden Avenue and via Greenwood Drive to Shakespeare Drive (**Route 9**);
- Connection from Leach Road to Kings End via Kingsclere Road (**Route 10**).

**Table 4.2** identifies the opportunities that could be considered for each of the secondary routes for NW Bicester.

In response to the principles for routes, secondary connections may be:

- Sharing quiet streets with traffic; and
- On gravelled surfaces and potentially unlit if in environmentally sensitive areas.

**Table 4.2 – Opportunities to Consider for Improving Secondary Connections**

Route No.	Section	Opportunities for Consideration
Route 6	B8 Shakespeare Drive	<ul style="list-style-type: none"> <li>Considering potential to sign the area as an on-street cycle route as part of a wider network.</li> </ul>
	C9 Blenheim Drive, Orchard Way, Leach Road	<ul style="list-style-type: none"> <li>Improve surface and provide signage (Photograph 2.36);</li> <li>Incorporate cycle facilities in traffic calming measures.</li> </ul>
Route 7	D4 Bure Park Primary School and Southwold Primary School	<ul style="list-style-type: none"> <li>Improve signage to destinations including the schools, parks and other routes.</li> </ul>
	D6 Lord's Lane to Bure Park Nature Reserve	<ul style="list-style-type: none"> <li>Potentially widen route to accommodate cyclists.</li> <li>Explore wildlife-friendly lighting.</li> </ul>
	D7 Bure Park Nature Reserve	<ul style="list-style-type: none"> <li>Improve signage to destinations</li> </ul>
Route 8	D5 Lord's Lane to Lucerne Avenue	<ul style="list-style-type: none"> <li>Improve signage, particularly on southern extent of Lucerne Avenue to connect to other routes.</li> <li>Provide suitable width for cyclists as well as pedestrians.</li> </ul>
Route 9	B11 Linkage from Howes Lane to Shakespeare Drive	<ul style="list-style-type: none"> <li>Possibility of creating a pedestrian and cycle linkage which links the development site to the residential area and onwards to Bicester.</li> </ul>
Route 10	B1 Kingsclere Road	<ul style="list-style-type: none"> <li>On-street cycle facilities could be provided to provide a clearer cycle route towards the town centre</li> </ul>

## Crossing Locations

As with the primary connections, each of the secondary connections requires a means of crossing the Howes Lane/ Lord's Lane corridor (which will be in use for traffic to varying degrees depending on the highway access strategy options taken forward). The anticipated crossing locations are as follows:

Route 6	There is an existing toucan crossing close to the entrance to Shakespeare Drive. A crossing at this location will be required whichever highway access strategy is taken forward.
Route 7	A toucan crossing should be provided close to the access to the nature reserve links from Lord's Lane.
Route 8	A toucan crossing should be provided close to the access to the Lucerne Lane links from Lord's Lane.
Route 9	A toucan crossing should be provided on Howes Lane close to the access to the route through to Dryden Avenue/ Shakespeare Drive.

## 4.6 Other Routes

In addition to the primary and secondary connections there are certain routes in the wider town that will also be important for connections from NW Bicester, as well as for residents of the town as a whole. Key routes that may require consideration include:

- From Bicester North Station area to Launton Industrial Estate. This was not surveyed, but it is noted that there is an existing off road walking and cycling route running to the north of the railway line on Town Walk North and connecting via Town Walk East to the industrial estate;
- From the town centre/ Kings End to Bicester Town Station; and
- From North West Bicester to the Kingsmere development to the south.

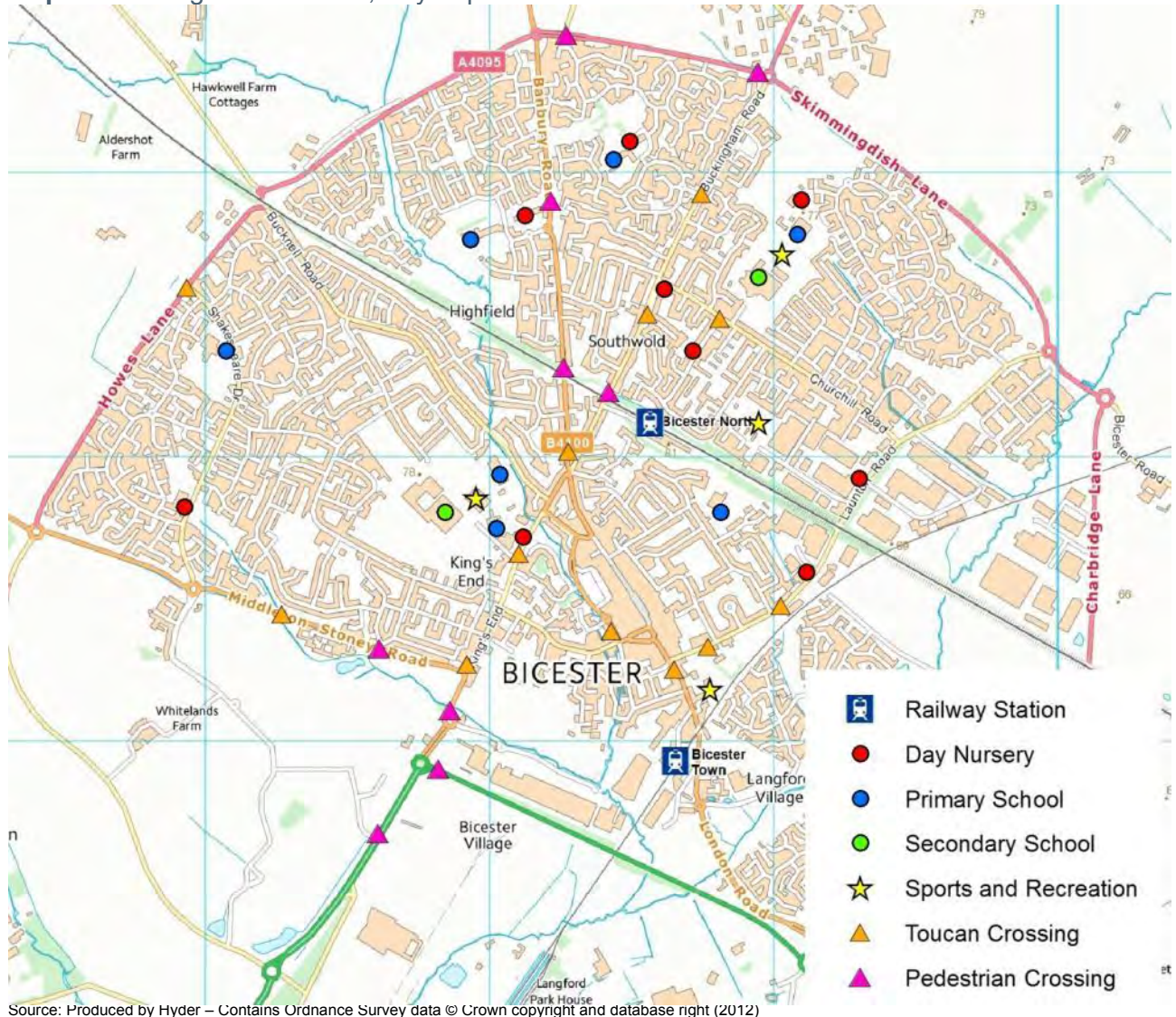


# Appendix 1 – Audit of Existing Conditions

## Bicester Overview

Map 1 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.

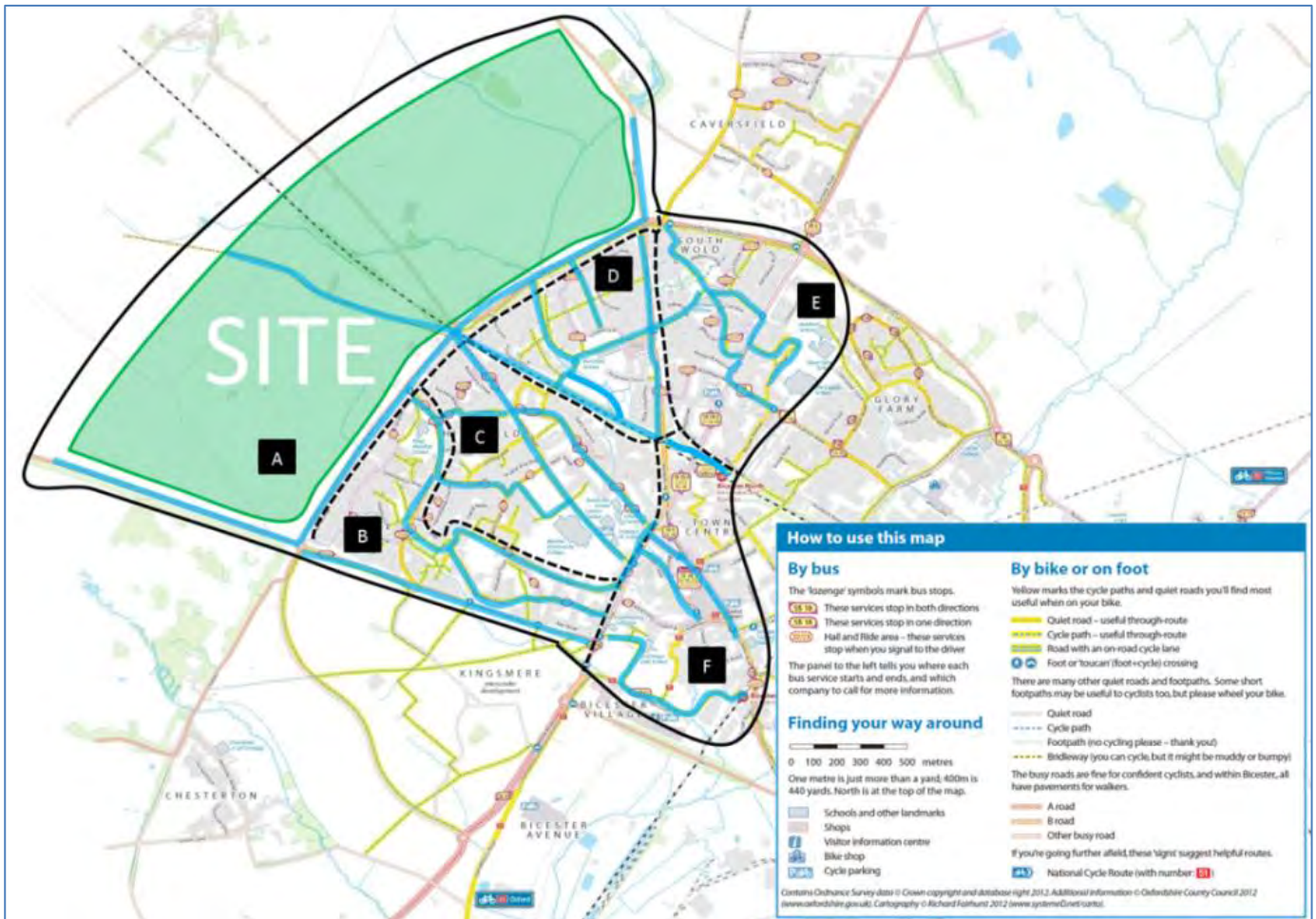
Map 1: Crossing Infrastructure, Key Trip Attractors and Generators



### Audit Methodology

The walking and cycling audit has divided Bicester up into six zones for assessment, as shown in **Map 2**. Internal linkages in Zone A (i.e. the masterplan site) will be explored as part of the masterplan development.

**Map 2: Zones of Bicester for Walking and Cycling Audit**



# Zone B Audit

## Section B1 – Kingsclere Road

Kingsclere Road is residential street which forms one of the connecting routes through the area, joining up with Leach Road and George Street. Traffic calming measures are in place (build outs and speed humps) to lower vehicle speeds (**Photograph 1**).

Footways are present on either side of the road with street lighting and dropped kerbs mostly provided. However, tactile paving is not provided at crossing points. Pedestrian only linkages are also in place to link to Ashby Road and Kennedy Road. There is no specific provision for cyclists along this section and a cycle gap is not present at the build outs.

### Section B1 Route Map



### Issues

- Lack of on-street cycle facilities

### Positives

- Footways present along entire section
- Pedestrian only linkages to neighbouring residential areas

### Opportunities

- On-street cycle facilities could be provided to provide a clearer cycle route towards the town centre

### Photograph 1



## Section B2 – Kings Avenue and Kennedy Road

Section B2 passes through a residential area with a number of cul-de-sacs (**Photograph 2**). Footways are present along both sides of the highway with grass verges along the majority of Kings Avenue separating the footway from the carriageway. Dropped kerbs are present at most crossing points although tactile paving was not provided. There are no specific facilities for cyclists along this section.

### Section B2 Route Map



### Issues

- Lack of facilities for cyclists

### Positives

- Footways present along both sides of the carriageway (**Photograph 3**).
- Verges separating carriageway and footway along Kings Avenue

### Opportunities

- On-street cycle facilities could be provided to provide a clearer cycle route towards the town centre

### Photographs 2 & 3



## Section B3 – B4030 Middleton Stoney Road

The B4030 Middleton Stoney Road is of east-west alignment and provides a main radial route from the town centre and Bicester Village area. It serves the Kingsmere development on the south side and will connect to the south west corner of the NW Bicester.

A footway is provided on the northern side of the carriageway although the land on the southern side of the carriageway is currently being developed as part of the Kingsmere development. Some traffic calming of Middleton Stoney Road is proposed, most likely in the form of speed cushions with advisory cycle routes. It is assumed it will then be a 30 mph road.

There is a footway on the northern side mostly immediately adjacent to the road. The footway is narrow (1.4m) in places with vegetation bounding the northern side of the footway. Crossing points with lowered kerbs and tactile paving are provided at locations for pedestrians to access the Kingsmere development with pedestrian refuges provided at the two roundabout junctions.

### Section B3 Route Map



### Issues

- Missing footway on southern side of the highway (although it is assumed this is to be constructed as part of the development)
- Relatively high volumes of traffic
- Overgrown vegetation along part of the route

### Positives

- Pedestrian refuges across Middleton Stoney Road to access Kingsmere Development

### Opportunities

- An off-road shared route for walking and cycling could be provided on the northern side of the road which could run parallel to Middleton Stoney Road at the western extent (Section B12). There is also a wide highway verge at the eastern extent of Middleton Stoney Road which could allow a shared surface to be installed. In the middle section the widening would require either carriageway narrowing or removal of vegetation screening from adjoining housing. However, proposals for traffic calming may improve conditions for cyclists such that an off road route may not be required.

## Section B4 – Kingsclere Road – Kennedy Road Pedestrian Linkage

Section B4 provides a pedestrian route between Kennedy Road and Kingsclere Road (**Photograph 2.4**). The section also provides access to a playground, local shops with a further link to Ashden Road.

### Section B4 Route Map



### Issues

- There is no street lighting present along this section, although the route is open in feel and character.
- There is no provision for cyclists.

### Positives

- The section is a segregated pedestrian route linking two of the routes (Sections B2 and B3) for pedestrians and cyclists into Bicester.

### Opportunities

- The route could be widened as a cycle link if added as part of a wider cycling network in the area.

### Photograph 2.4



## Section B5 – Leach Road – Langford Gardens Pedestrian Link

Section B5 provides a pedestrian link between Leach Road and Langford Gardens, with footpaths on the northern and eastern sides of the playing fields. The footpaths are lit but relatively narrow (approx. 1.4m) and bounded by housing and fencing for the playing field (**Photograph 2.5**). The onwards link to the riverside section (section B6) is via a pedestrian only footbridge across the watercourse from Ruck Keene Close.

### Section B5 Route Map



### Issues

- Narrow footpaths around the playing fields (**Photograph 2.6**)
- Limited opportunities for widening given property boundaries.

### Positives

- Off-road pedestrian route provides vehicle-free access

### Opportunities

- There are limited opportunities for widening the footpath to accommodate cyclists.
- Lighting and visibility could be improved to enhance personal safety.

### Photograph 2.5 & 2.6



## Section B6 – Riverside Section (Tubb Close)

The footpath in Section B6 follows the watercourse between Section B5 and Tubb Close with pedestrians then able to walk along a short section of Tubb Close onto Kennedy Road (Section B2). The section is not lit but a bridge is provided to link with Ruck Keene Close (**Photograph 2.7**). The link to section B7 has measures to stop cyclists passing through.

### Section B6 Route Map



### Issues

- Cyclists prevented from accessing section B7 (this may be to protect the open space)
- No street lighting present

### Positives

- Segregated footpath provision (**Photograph 2.8**).
- Attractive environment
- Pedestrian linkage to Ruck Keene Close

### Opportunities

- Enhance the footpath and consider potential to create a cycleway to provide off-road access along this section and link onto Kennedy Road
- Provide pedestrian level street lighting along section

### Photographs 2.7 & 2.8





## Section B7– Open Space South of Shakespeare Drive (Opposite West Bicester Community Centre)

Section B7 encompasses a section of open space to the south of Shakespeare Drive. A footpath is provided on the southern side which although lit is relatively narrow and enclosed by fencing and hedge with graffiti visible in places. To the east is an open space with a watercourse passing through with an informal pedestrian bridge and unsurfaced pedestrian footpath through the space (**Photograph 2.9**). There are further links from this informal footpath into Lawrence Way and Danes Road.

### Section B7 Route Map



### Issues

- Narrow existing footpath, potential issues of personal security and presence of graffiti (**Photograph 2.10**).
- Unsurfaced footpath through open area.

### Positives

- Opportunity for improvements in the local area.

### Opportunities

- There could be an opportunity to improve this space and provide a cycleway and footway which links to Section B6 to the south and section B9 to the north to form desirable, direct pedestrian and cycle routes. The widening of the route to a cycleway may be problematic given property boundaries and vegetation.

### Photographs 2.9 & 2.10



## Section B8 – Shakespeare Drive

Shakespeare Road is one of the main through routes in the area providing access between Howes Lane and Middleton Stoney Road and serving a number of residential side streets and local amenities. Footways are present along both sides of the carriageway although in places the footways are situated away from the carriageway and the presence of vegetation and lack of natural surveillance could lead to fears for personal security. There are pedestrian only linkages to Thames Avenue and Shannon Road. Street lighting is provided along the length of the section (**Photographs 2.11 & 2.12**). Dropped kerbs are provided at crossing points but tactile paving is absent.

### Section B8 Route Map



### Issues

- Sections of footway are obscured by vegetation with little natural surveillance
- No specific provision for cyclists, although the nature of the street means that it is appropriate as a shared space.

### Positives

- Pedestrian only linkages to Thames Avenue and Shannon Road
- Main route through the area with potential for connecting NW Bicester site to Middleton Stoney Road.

### Opportunities

- Considering potential to sign the area as an on-street cycle route as part of a wider network.

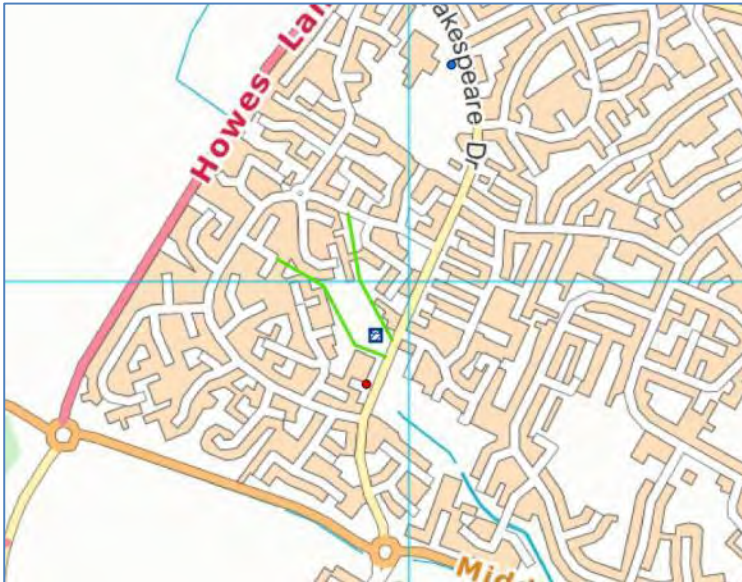
### Photographs 2.11 & 2.12



## Section B9 – Open Space North of Shakespeare Road (Around West Bicester Community Centre)

Section B9 encompasses the pedestrian routes north of Shakespeare Drive, and link the community with local shops, playground and West Bicester Community Centre. The routes are lit although the route to the rear of the local shops lacks natural surveillance which could lead to issues with personal security.

### Section B9 Route Map



### Issues

- More isolated nature of route to rear of local shops (**Photograph 2.13**)
- No provision for cyclists

### Positives

- Off-road cycle routes, opportunity to link up to form a cohesive network (**Photograph 2.14**)

### Opportunities

- Opportunity to create shared routes for pedestrians and cyclists

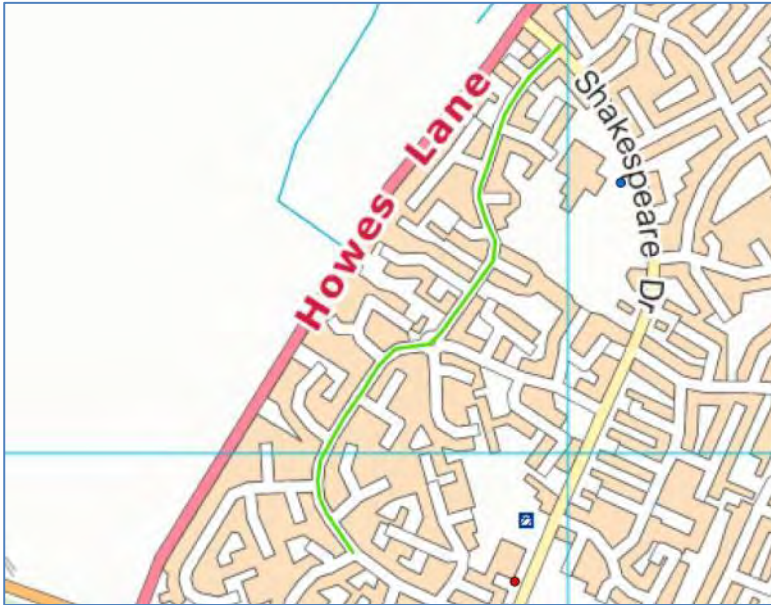
### Photographs 2.13 & 2.14



## Section B10 – Drysden Avenue and Wansbeck Drive

Drysden Avenue and Wansbeck Drive form a link road providing access to a number of residential cul-de-sacs. Footways are present on both sides of the carriageway with street lighting and dropped kerbs provided at crossing points. Tactile paving is not provided at crossing points.

### Section B10 Route Map



#### Issues

- There are no significant issues at present.
- No specific provision for cyclists, although this is a relatively quiet residential street.

#### Positives

- Pedestrian footways with street lighting in place

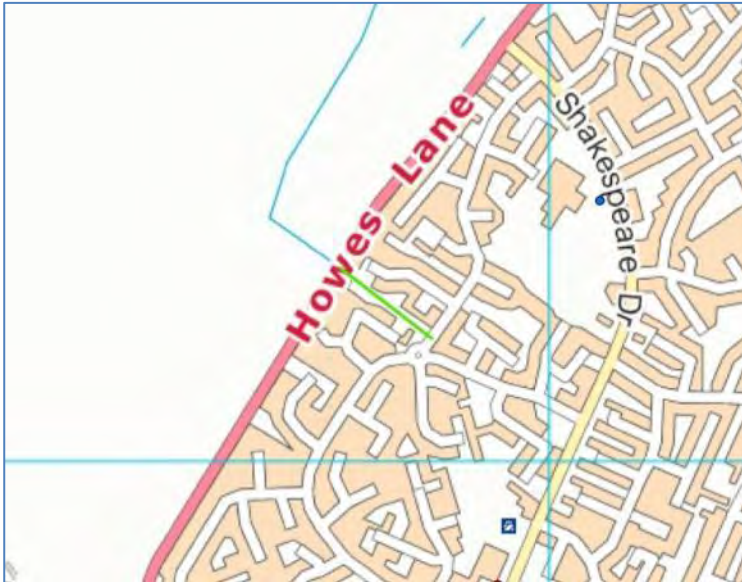
#### Opportunities

- Using the section to create part of a cohesive network for pedestrians and cyclists, although Shakespeare Drive
- There are opportunities to widen the footway, particularly on the southern side although the number of side streets means that a shared surface is unlikely to be attractive to cyclists

## Section B11 – Linkage to Howes Lane

Section B11 is presently a relatively narrow section of footway with a grass verge which extends from Dryden Drive to Howes Lane with linkages to Beckdale Close and Dove Green. The section is lit and is for pedestrians only (**Photograph 2.15**).

### Section B11 Route Map



### Issues

- Pedestrian only – no facilities for cyclists.

### Positives

- Space to create a pedestrian and cycle link to the proposal (subject to moving street lights and widening the route) (**Photograph 2.16**)

### Opportunities

- Possibility of creating a pedestrian and cycle linkage which links the development site to the residential area and onwards to Bicester.

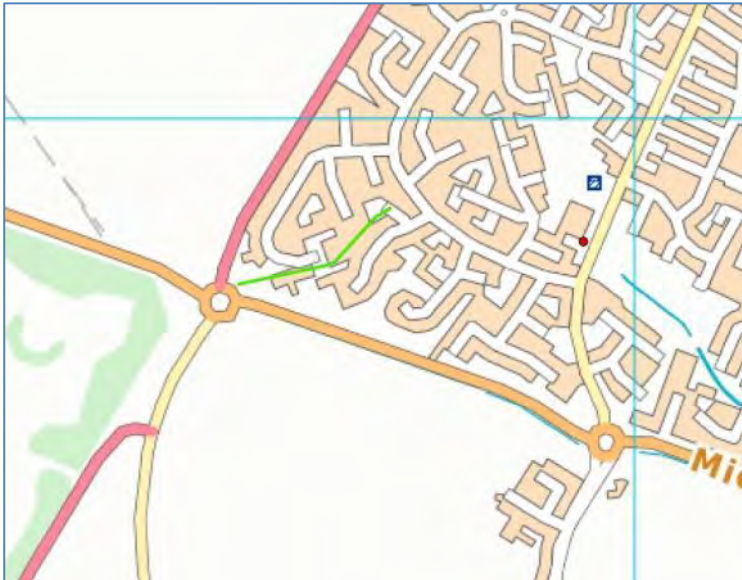
### Photographs 2.15 & 2.16



## Section B12 – Isis Avenue to Middleton Stoney Road

Section B12 encompasses a set of footpaths which link between Isis Avenue, Howes Lane and Shannon Road. Whilst the footways linking Isis Avenue and Howes Lane are surfaced and lit, the section to Shannon Road is unsurfaced and passes through an area which is heavily vegetated. The section has the potential to be upgraded to form a pedestrian and/or cycle link with the site which would allow users to avoid part of Middleton Stoney Road.

### Section B12 Route Map



### Issues

- Isolated nature of footpath at present, potential issues for personal security.
- Unsurfaced sections, unclear if the section is a designated footpath.

### Positives

- Potential for upgrading to form a local connection.

### Opportunities

- There could be the opportunity to upgrade this section to provide an improved link for pedestrians and possibly cyclists.

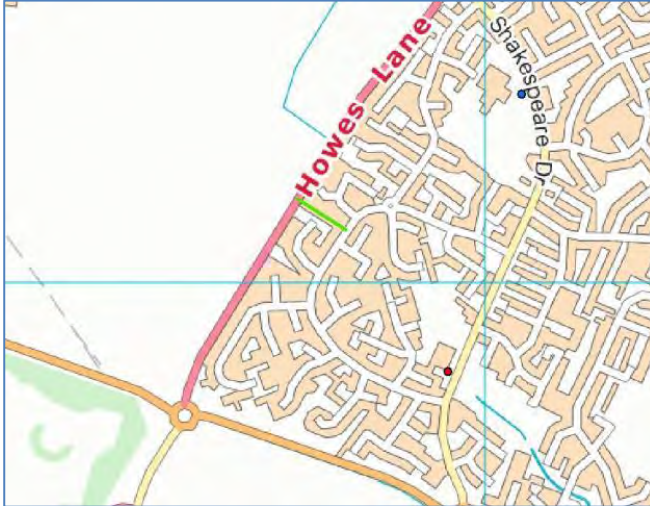
### Photographs 2.17 & 2.18



## Section B13 – Minor pedestrian linkage to site

This section is a narrow footpath between Howes Lane and the residential area. The section is an alleyway bordered by residential dwellings along both sides with and tall boundary fencing (Photograph 2.19). The route is lit but the surface is relatively poor as it is covered in vegetation (moss), with vegetation also encroaching on the path from some of the adjoining properties.

### Section B13 Route Map



#### Issues

- Issues for personal security due to lack of surveillance and narrow confined route.
- Vegetation growing on footpath and fencing (Photograph 2.20).

#### Positives

- A connection from Howes Lane to the residential area.

#### Opportunities

- Address issues regarding vegetation to make the route more attractive.

### Photographs 2.19 & 2.20



## Section B14 – Howes Lane

Howes Lane (A4095) is a single carriageway with a 50mph speed limit. There is no provision for pedestrians and cyclists or crossing facilities, with the exception of a footway on the south side of the road between Shakespeare Drive and Bucknell Road.

### Section B14 Route Map



### Issues

- There is no provision for pedestrians or cyclists on most of the length.
- Vehicles travel at high speeds along the A4095.

### Positives

- A number of informal routes provide access to the adjacent residential area.

### Opportunities

- Provide footpaths and cycleways as part of the development of NW Bicester.



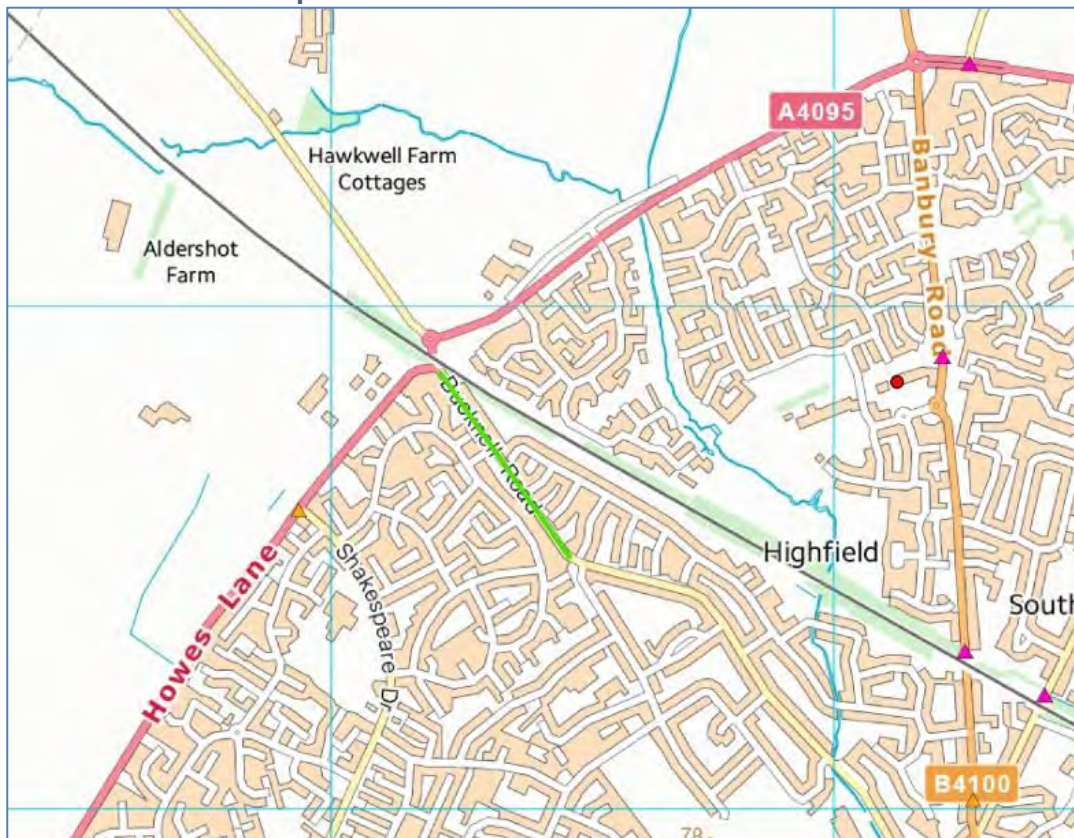
# Zone C Audit

## Section C1 – Bucknell Road (Junction of Howes Lane to Junction with George Street)

This section passes to the west of the railway line between the junction with Howes Lane to the north and the junction with George Street to the south east. Footways are provided on either side of the highway with on-road cycle lanes marked. At the northern extent pedestrian movements are limited by the bridge under the railway. The eastern footway is very narrow whilst the western footway ends in a verge immediately under the railway bridge. A pedestrian refuge is provided to the south of the junction although pedestrians wanting to walk from Bucknell Lane to the eastern arm of Howes Lane would either need to use the narrow section of footway on the eastern side or cross under the bridge in the middle of the two junctions with limited visibility.

The footways are surfaced with dropped kerbs and street lighting although tactile paving is not provided. There are also pedestrian only links along this section which link to residential side streets Barry Avenue, Maud Close and Margaret Close.

### Section C1 Route Map



### Issues

- Difficulties of routeing under the railway bridge.
- Narrow pedestrian footway on eastern side of Bucknell Road around the railway bridge (**Photograph 2.22**).
- Incomplete pedestrian footway on Bucknell Road around the railway bridge.
- Bucknell Road is a radial traffic route to the town centre.

### Positives

- Advisory cycle lanes are provided in both directions along Bucknell Road.
- Pedestrian refuge to the south of the junction with Howes Lane.
- Pedestrian only links to residential side-streets.

- Relatively narrow pedestrian-only linkages to residential side streets.

### Opportunities

- The reconfiguration of the junctions around the railway bridge could provide an opportunity to also upgrade pedestrian facilities such as widening of the western footway around the railway bridge and continuing of eastern footway beyond the railway bridge.
- Land appears to be available on the western side of the footway which could be used to widen the footway, possibly to allow a shared surface with cyclists. The extent of the widening would depend on what vegetation could be removed, particularly south of the Veterinary Centre. Space on the eastern side of the footway is also available south of the Veterinary Centre.

### Photographs 2.21 & 2.22



### Section C2 – Connections from Bucknell Road to Bure Park

This section covers the east-west connections between Bucknell Road and Bure Park, a connection with limited opportunities owing to the London – Birmingham railway line severing the two communities.

### Section C2 Route Map



Between Howes Lane and Banbury Road (approx. 1.5km apart) the only crossing point into Bure Park is via a pedestrian underpass accessed off Barry Avenue. The underpass is surfaced with cyclists required to dismount in order to use the route. The underpass is lit and signposted but does feature two 90 degree corners which limit visibility for pedestrians. With a lack of natural

surveillance, these could be considered a personal safety issue, particularly for more vulnerable pedestrians and during the hours of darkness. From the underpass access off Barry Avenue pedestrians can use residential streets to reach Bucknell Road, the majority of which are cul-de-sacs featuring footways to allow pedestrians to pass through. There is no provision for cyclists along this section who would have to dismount and use part of the pedestrian footways to reach Bucknell Road.

#### Issues

- Lack of natural surveillance, limited visibility and cycling prohibited at pedestrian underpass.
- Lack of cycling connections from residential cul-de-sacs onto Bucknell Road.
- Lack of signage from underpass to Bucknell Road.

#### Positives

- Dedicated pedestrian linkage across railway line.
- Pedestrian only linkages onto Bucknell Road.

#### Opportunities

- Improved signage for pedestrian routes in the area.
- Improved lighting, painting, vegetation clearance etc. at underpass.
- Providing cycle links onto Bucknell Road in addition to the present pedestrian only links.

### Section C3 – Bucknell Road (Junction of with George Street to Junction with Queens Avenue)

This section continues southwards from Section C1 along Bucknell Road to the junction with Queens Avenue. Footways are provided along the length of the highway with dropped kerbs at crossing points but not tactile paving. The footways are approximately 1.6m along Bucknell Road although the footways are narrower at the southern extent around the junction with Queens Avenue. There are pedestrian only linkages to Titchener Close, Fane Close and Ewart Close

#### Section C3 Route Map



#### Issues

- Narrower footways along southern extent

#### Positives

- Pedestrian only linkages into neighbouring residential streets

## Opportunities

- Widen footway (but could have impact on carriageway and bus movements).

## Photographs 2.23 & 2.24



## Section C4 – Queens Avenue

Queens Avenue provides footways on both sides of the road, linking the King's End and Bicester Village to the northern end of the town centre. Footways are segregated from the road by grass verges with a zebra crossing present to facilitate pedestrian movements.

## Section C4 Route Map



## Issues

- Lack of signage to key destinations in close proximity

## Positives

- Wide footway segregated from the road (Photograph 2.25)
- Crossing present

## Opportunities

- The opportunity exists to publicise key destinations within the vicinity of the route, including the town centre, Bicester Village, schools and other routes (**Photograph 2.26**)

## Photographs 2.25 & 2.26



## Section C5 – Queens Avenue to St Mary’s Primary School

Queens Avenue provides vehicular access to St Mary’s Primary School, Bicester Community College and Bicester and Ploughley Sports Centre. A footway is only provided on the eastern side of the carriageway with pedestrian guardrail present to avoid pedestrians stepping into the carriageway. At the northern extent pedestrian crossing points are provided for passing the entrances to St Mary’s Primary School and Ploughley Sports Centre

## Route Map



## Issues

- Pedestrian guardrail makes the carriageway appear narrower and discourages cyclists
- Footway provision only on eastern side of carriageway

## Positives

- Pedestrian guardrail improves pedestrian safety (**Photograph 2.27**)

- Clear pedestrian crossing points at access points of leisure centre and school (**Photograph 2.28**)

### Opportunities

- This route could be signed and improved as a cycle route.

### Photographs 2.27 & 2.28



## Section C6 – Shared surface past Bicester College

This short section provides a shared surface between Queens Avenue and George Street. This section is approximately 3m wide and street lit. There is a lack of natural surveillance along the section, although as the alignment of the section does allow users to see ahead and enhance the feeling of personal security.

### Section C6 Route Map



### Issues

- Lack of natural surveillance

### Positives

- Traffic free walking and cycling section (**Photograph 2.29**)
- The section prevents through vehicular traffic movements reducing traffic volumes in other sections (**Photograph 2.30**)

### Opportunities

- The section does not require improvement.

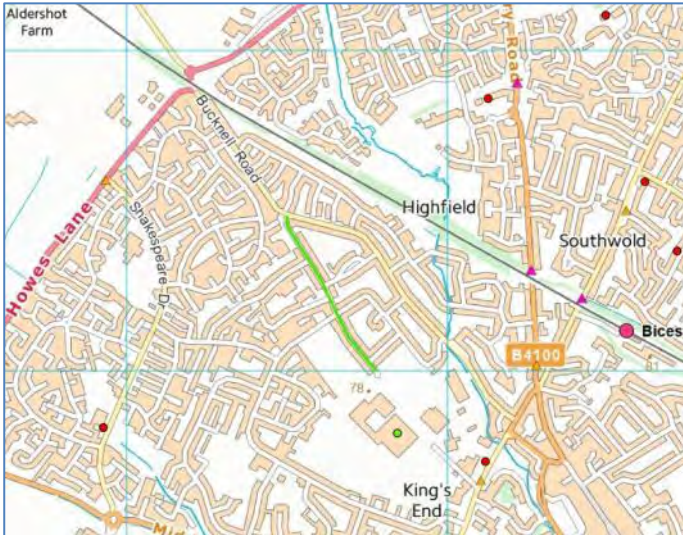
### Photographs 2.29 & 2.30



## Section C7 – George Street

Section C7 is made up of George Street and links with sections C1, C2, C3, C6, C8 and C10. Footway provision along George Street is intermittent with missing links at the southern extent on the eastern side and narrow footways on the western side further north. Cars were also observed to be parked on the footway in places. Dropped kerbs are provided although there is no provision of tactile paving at crossing points.

### Section C7 Route Map



### Issues

- Missing sections of footway
- Narrow sections of footway (**Photograph 2.31**)
- Vehicles parked on footway
- No facilities for cyclists along this section

### Positives

- Quiet residential street with no through traffic (**Photograph 2.32**)

### Opportunities

- Upgrading of footways at points
- Provide facilities for cyclists in traffic calming features on street.

### Photographs 2.31 & 2.32

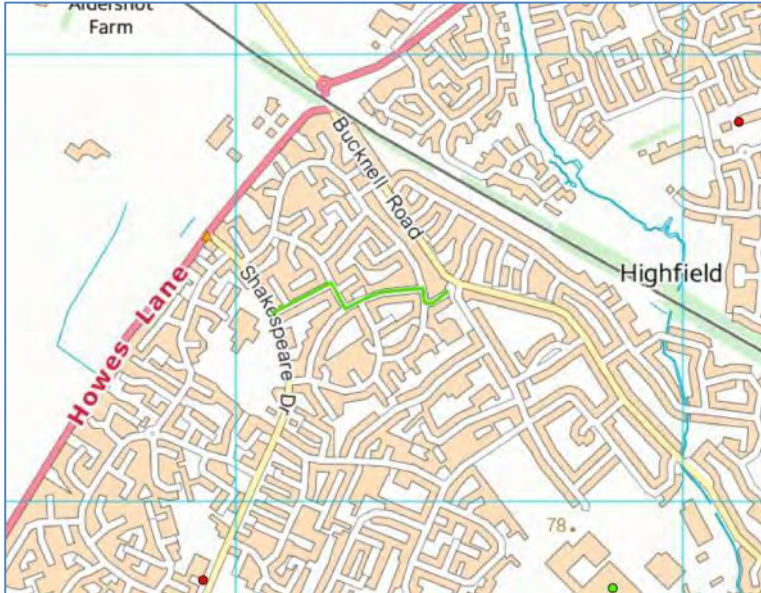




## Section C8 – Longfellow Close, Byron Way, Brook Road

Section C8 provides an east-west connection for pedestrians and cyclists. This route consists of residential streets with a pedestrian only linkage from Longfellow Close to the junction of Bucknell Road and George Street. Footways, street lighting and dropped kerbs are present although tactile paving was not in place.

### Section C8 Route Map



### Issues

- Lack of clear routes for pedestrians and cyclists.
- No specific facilities for cyclists.

### Positives

- Footways and dropped kerbs are provided (**Photograph 2.33**)
- Provides pedestrian only connection from Longfellow Close onto Bucknell Road and George Street.

### Opportunities

- There are limited opportunities as these are residential streets however signage would be of assistance to clearly set out the route.

### Photographs 2.33 & 2.34



## Section C9 – Blenheim Drive, Orchard Way, Leach Road

Section C9 provides a further east-west route between Shakespeare Drive to George Street. The route is made up of residential streets with footways and street lighting provided along both sides of all the carriageways; however tactile paving and standard dropped kerbs are not provided at all crossing points. Traffic calming measures (build outs) are in place along Leach Road which assist pedestrian movements across the highway and reduce traffic speeds. There are no specific cycle measures in place along this section with a cycle gap not provided at the built-outs.

### Section C9 Route Map



### Issues

- Lack of clear routes for pedestrians and cyclists.

### Positives

- Traffic calming measures reduce vehicle speeds and assist pedestrian movements. (Photograph 2.35).

### Opportunities

- Improve surface and provide signage (Photograph 2.36);
- Incorporate cycle facilities in traffic calming measures.

### Photographs 2.35 & 2.36



## Section C10 – Pedestrian Routes North of Bicester College

Section C10 covers the pedestrian only routes to the north of Bicester College providing connections between Leach Road, Ashby Road, George Street and Kingsclere Road. The route to George Street passes between Bicester College and local allotments. Although this route is lit, it is relatively narrow with minimal natural surveillance. The concrete surface route is showing signs of deterioration.

The route to Kingsmere Road passes by Ashby Road which requires pedestrians to pass through a parking area although there is a wide pedestrian only footway further on. The route to Leach Road is also pedestrian only but there is a lack of signage showing that this is a through route. These sections are lit but can be narrow in places owing to overgrown vegetation. There are no specific facilities for cyclists in this section with cyclists diverting via Leach Road and George Street.

### Section C10 Route Map



### Issues

- Narrow sections of footway on route north of Bicester College
- Lack of signage showing pedestrian through routes
- Overgrowing vegetation narrowing footways
- Limited natural surveillance on route north of Bicester College

### Positives

- Quiet residential area with no through traffic
- Pedestrian only linkages which provide direct links

### Opportunities

- Providing signage to clearly show pedestrian routes
- Address overgrown vegetation

# Zone D Audit

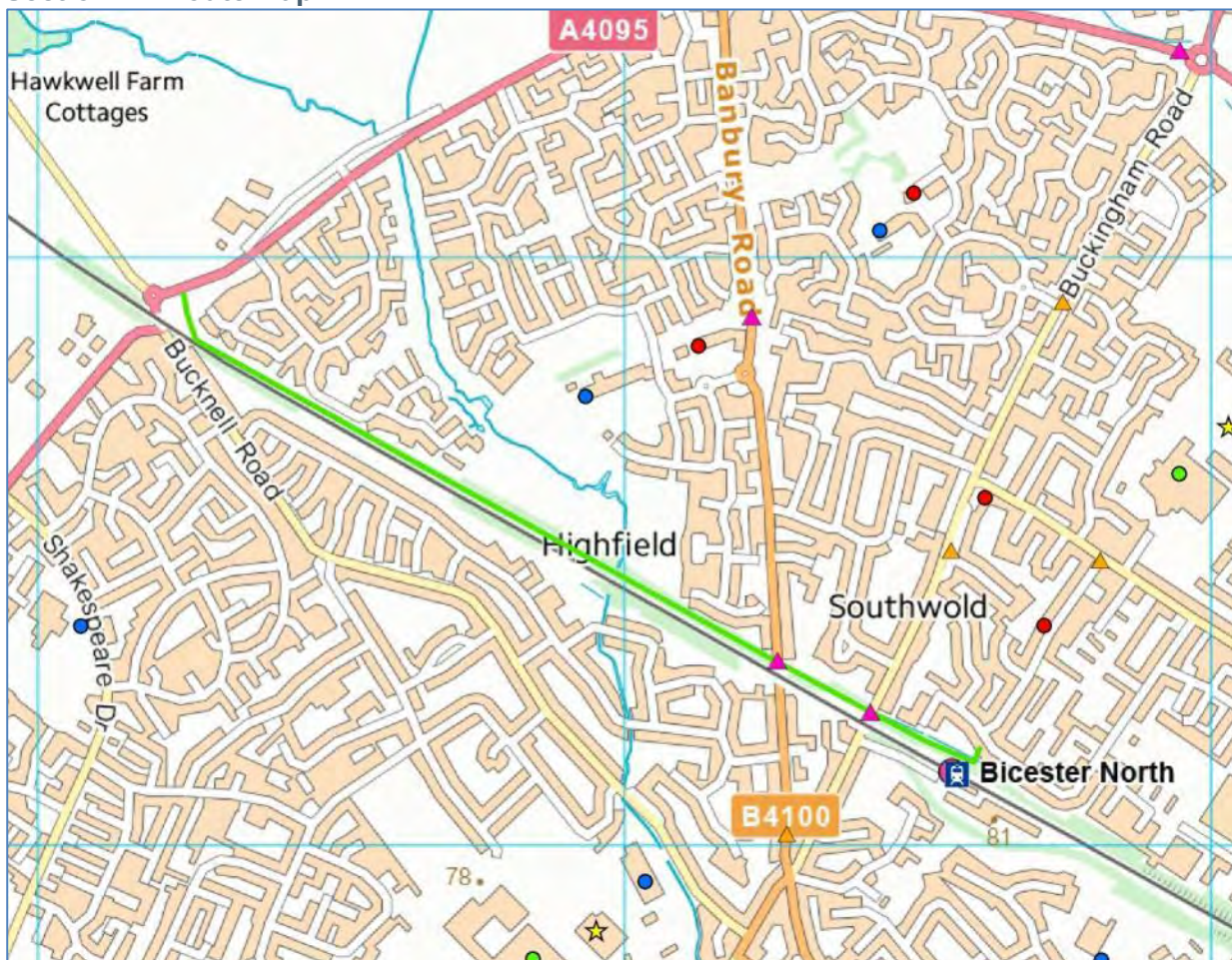
## Section D1 – Route Parallel to Railway

This section connects Lord's Lane (A4095) to Bicester North Railway Station. The off-road route is a narrow path adjacent to the railway and provides a direct route travelling in a south easterly direction. The surface consists of earth and gravel between Lord's Lane and Banbury Road (**Photograph 2.37**). This section is a narrow path for pedestrians rather than cyclists.

Pelican crossings are located on Banbury Road (**Photograph 2.38**) and Buckingham Road facilitating pedestrian and cyclist movements towards the tarmac surfaced paths at the southern extent of the route.

The section between Banbury Road and Buckingham Road provides a tarmac surfaced route segregated for pedestrians and cyclists through a small park (**Photograph 2.39**). This connects to shared pedestrian and cycle route connecting Buckingham Road and Balliol Road. These routes are of a high quality and well-lit, however surveillance from residential properties is limited.

### Section D1 Route Map



### Issues

- Start of route poorly marked with limited visibility from route on Lord's Lane (**Photograph 2.40**).
- Gravel and earth surface potentially unattractive in inclement weather conditions and not provided for cyclists.
- Overgrown vegetation in areas.
- Poorly lit.
- Inadequate visibility presenting issues for personal safety.