

# Bicester Phase 1

Housing number increase

Environmental statement Technical appendix E: Transport assessment

March 2013



## **Transport assessment frontispiece**

- 1.1 The following Transport Assessment (TA) was originally prepared by WSP in support of a S73 application (12/01355/OUT), submitted in August 2012, with the purpose of outlining the transportation implications associated with a proposed increase in the number of residential dwellings within the boundary of the consented SW Bicester Phase 1 development (planning application reference 06/00967/OUT).
- 1.2 The S73 application is to be withdrawn and this new planning application submitted in its place, which re-defines the planning terms for the increase in development quantum. This includes an amended red line boundary that lies entirely within the consented SW Bicester Phase 1 scheme boundary. It is in this context that the scope of this TA remains applicable to the proposals by virtue of the assessment presented which continues to focus on the same net change in travel demand and associated transport effects.
- 1.3 It is therefore considered that the information, analysis and conclusions therein are appropriate in the process of the determination of the current planning application.






# SOUTH WEST BICESTER - PHASE 1 INCREASED HOUSING DENSITY

## Transport Assessment

07/08/2012

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# SOUTH WEST BICESTER - PHASE 1 INCREASED HOUSING DENSITY

## Transport Assessment

07/08/2012

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# 1 Introduction

## 1.1 Background

- 1.1.1 Countryside Properties (Bicester) Ltd has previously been granted outline planning permission (Ref 06/00967/OUT) for up to 1,585 dwellings on their site located in South West Bicester. The development, which is marketed as Kingsmere, will be referred to as South West Bicester Phase 1 for the purpose of this report. Under the Phase 1 proposals, there is a health village (plus an elderly persons nursing home), a local centre, a pub/restaurant, a day nursery, B1/B2 uses within a commercial area, a community centre, a primary school, a secondary school, a hotel, sports pitches and pavilions.
- 1.1.2 The Phase 1 development is located on land at Whitelands Farm to the south west of Bicester and is bounded by the A41 Oxford Road, the B4030 Middleton Stoney Road and the A4095. The location of the site is illustrated on **Figure 1**.
- 1.1.3 The consented development provided a link road between the A41 and the Middleton Stoney Road / Howes Lane junction. The link road, also known as the South West Bicester Perimeter Road, was officially opened in April 2012. The South West Bicester development has also constructed (or is constructing) associated new roads, junctions, parking, infrastructure, earthworks and new accesses to surrounding agricultural land.
- 1.1.4 Countryside Properties (Bicester) Ltd has appointed WSP UK Ltd to provide a Transport Assessment (TA) in support of an increase in the number of dwellings on the South West Bicester Phase 1 site of up to 100 additional dwellings. In order to achieve this, a change of condition application under Section 73 of the Town and Country Planning Act 1990 will be submitted to Cherwell District Council (CDC).
- 1.1.5 This TA has thus been written in support of the application to increase the housing density by up to 100 dwellings across the Phase 1 site. It therefore assesses the impact of the increased housing density and number of dwellings on the local highway network.

## 1.2 Planning History – “Reserved School Site”

- 1.2.1 As mentioned above, the South West Bicester Phase 1 site benefits from existing outline planning consent for 1,585 dwellings, ancillary uses and related infrastructure. Some of the infrastructure measures brought forward by Phase 1, such as the South West Bicester Perimeter Road and a new roundabout off the A41 Oxford Road, Middleton Stoney Road / Howes Lane Junction, have been constructed and are in operation at the time of writing. A number of housing land parcels within the Phase 1 site are also under construction.
- 1.2.2 During the early consultation stages for the South West Bicester Phase 1 proposals with Cherwell District Council, it was agreed to reserve land for a second primary school in connection with Phase 1. However, following continued consultation, it became clear that two primary schools would not be required, releasing the area reserved for a possible second school for residential development.
- 1.2.3 A separate planning application was submitted and granted in support of up to 46 dwellings on the “reserved school site” (Ref. 11/01052/OUT).

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## 1.3 The Development Proposal

- 1.3.1 It is understood that housing delivery is a key consideration for the continued economic growth of Bicester. The development at South West Bicester is able to positively contribute further to this by allowing for a re-plan of certain land parcels to deliver up to an additional 100 dwellings.
- 1.3.2 The proposed increase represents a 6.3% increase in overall housing numbers on the site. From consultation with the client, Countryside Properties (Bicester) Ltd, it is understood that these additional 100 residential dwellings could be provided across a number of land parcels.

## 1.4 The Approach of the Transport Assessment

- 1.4.1 This TA seeks to present the relative change in travel demand and impact associated with the provision of up to 100 additional residential dwellings in South West Bicester Phase 1. In doing so, the TA is structured as follows:
- **Section 2** provides an overview of national and local transport policy to provide context for the assessment of the transport issues of the development proposals;
  - **Section 3** provides a review of baseline conditions, including the status of travel by all available modes of transport at South West Bicester Phase 1;
  - **Section 4** details the South West Bicester Phase 1 scheme and the development proposals for up to 100 additional residential dwellings;
  - **Sections 5 and 6** analyse the traffic impact of the proposals; and
  - **Section 7** summaries and concludes the TA.



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## 2 Policy Context

### 2.1 Introduction

- 2.1.1 The strategic transport policy identified within this chapter sets out the overarching objectives for the development of land use and transport infrastructure, both nationally and locally in South East England.
- 2.1.2 The local transport policy has been developed in respect of this national and regional context and is set out in the Oxfordshire County Council Structure Plan, the Cherwell District Local Plan and the Oxfordshire County Council Local Transport Plan.
- 2.1.3 It is worth noting that some of these policies have been subject to revisions since the Phase 1 planning application was originally submitted.

### 2.2 National Planning Policy Framework, March 2012

- 2.2.1 Adopted on 27 March 2012, the Department for Communities and Local Government's (DCLG) National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied.
- 2.2.2 The NPPF replaces previous Planning Policy Guidance Notes and Statements, becoming the definitive national planning guidance from which local planning authorities can, in collaboration with their communities, produce local plans appropriate to the character and needs of their area.
- 2.2.3 Key to the NPPF and its success is the following statement from Paragraph 14:  
*"At the heart of the National Planning Policy Framework is a presumption in favour of sustainable development, which should be seen as a golden thread running through both plan-making and decision-taking."*
- 2.2.4 The NPPF places an emphasis on the delivery of urban extensions in meeting the wider economic aims of an area. In this respect, the proposed density increase at South West Bicester continues to deliver on this longstanding objective.
- 2.2.5 Transport forms one of the 12 core land use planning principles set out by the NPPF. The transport principle directs that locations which are sustainable, or which can be made sustainable, should become the focus for significant development. Opportunities to utilise sustainable modes of travel to their fullest, such as public transport, walking and cycling should be actively taken and these modes are considered within this TA. Paragraph 7 of the NPPF notes three 'dimensions' of sustainable development:
- Economic
  - Social
  - Environmental
- 2.2.6 Transport is able to contribute significantly to the development's adherence to these principles, through means such as providing infrastructure to support economic growth, enhancing accessibility to services, fulfilling the social needs of people, and providing solutions which minimise pollution and environmental impact.
- 2.2.7 The masterplan design for the proposed development facilitates the use of sustainable modes of travel by prioritising non-car journeys. Journeys made on foot and by cycle at a local level and by bus

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and train over a greater distance, will assist in meeting ambitions harboured by the NPPF in paragraph 30 to lower greenhouse gas emission and reduce congestion.

2.2.8 This TA also demonstrates how the proposed development accords with Paragraph 29 of the NPPF which details transport as having:

*“...an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives.”*

2.2.9 As encouraged in paragraph 29 of the NPPF, South West Bicester has been planned in such a way that gives people a “real choice” regarding their mode of travel. South West Bicester’s density and proximity to local facilities ensures that sustainable modes can be considered a favourable option for local trips.

2.2.10 This TA demonstrates how South West Bicester fulfils the requirements set out in paragraph 32 of the NPPF, to account for:

- *“The opportunities for sustainable transport modes to be used, reducing the need for major transport infrastructure”;*
- *“Provision of safe and suitable access to the site for all people”;* and
- *“Improvements which can be undertaken within the transport network to limit the significant impacts of the development”.*

## 2.3 The South East Plan: Regional Spatial Strategy for the South East of England, May 2009

2.3.1 The South East Plan (SEP) was adopted in May 2009 and provides a vision for the South East for the period to 2026. It provides an outline of how the region needs to respond to the challenges it faces including housing, the economy, transport and the need to protect the environment. It is the Regional Spatial Strategy for the South East and as such was a material considering in the original determination of the South West Bicester planning application.

2.3.2 The overall vision for the South East, as set out within the SEP is:

*“A socially and economically strong, healthy and just South East that respects the limits of the global environment. Achieving this will require the active involvement of all individuals to deliver a society where everyone, including the most deprived, benefits from and contributes to a better quality of life. At the same time the impact of current high levels of resource use will be reduced and the quality of the environment will be maintained and enhanced.”*

2.3.3 A key crosscutting theme in the SEP is the need for investment, from the Government and developers, in physical and community infrastructure to sustain current levels of growth.

2.3.4 Several objectives are outlined within the SEP with regard to transport. These include:

- *“To facilitate urban renaissance and foster social inclusion by re-balancing the structure and use of the transport system. In particular, bringing forward measures that encourage modal shift to more sustainable modes and significantly improve the attractiveness of local public transport services, walking and cycling”;* and
- *“To maintain the existing transport infrastructure as an asset.”*

2.3.5 Whilst the Secretary of State has indicated his intention to revoke regional strategies, they currently remain in force and are therefore relevant to the decision making process.

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## 2.4 Oxfordshire Local Transport Plan, April 2011

- 2.4.1 The Third Oxfordshire County Council (OCC) Local Transport Plan was adopted in April 2011 and covers transport policies for the County for the period 2011 to 2030. The policies set out a vision for transport in Oxfordshire in regards to tackling congestion, delivering accessibility, safer roads, better air quality and improving the street environment.
- 2.4.2 In order to reduce the impact of congestion across the whole of Oxfordshire the Policy proposes a dual approach including managing traffic growth (by improving Public Transport provision) as well as limited targeted network capacity increases such as junction improvement schemes.

## 2.5 Cherwell Local Plan

- 2.5.1 Cherwell District Council is currently in the process of developing a Local Plan. The Local Plan, which will be the key document setting out planning policy for the period until 2026, was considered by the Cherwell District Council Executive on 28<sup>th</sup> May 2012, with public consultation due to take place later this year. We currently understand that the council intend that submission will take place before the end of the year.

## 2.6 Non-Statutory Cherwell Local Plan

- 2.6.1 This Plan, whilst not part of the development plan for the district, was approved by the Council as an interim policy document for development control purposes. It was a key material consideration when the outline Planning Application for South West Bicester was being determined.
- 2.6.2 Transport policies within the Non-Statutory Cherwell Local Plan (NSCLP) have been prepared alongside Oxfordshire County Council, Integrated Transport and Land Use Strategies for Banbury and Bicester. The main aim of the strategies is to seek to accommodate planned development whilst minimising the growth in motorised traffic. The NSCLP thus takes into account the following key principles:
- *“Direct new development to locations where it can be accessed by walking, cycling and public transport and so reduce the need to travel, particularly by motor car”;*
  - *“Facilitate improvements to transport infrastructure”;* and
  - *“Adopt reduced parking strategies as maxima for new developments”.*
- 2.6.3 In order to provide credence to these key principles, a number of policies have been adopted covering all areas including transport:
- *Policy TR6: “The Council will seek to facilitate the provision and operation of an effective public transport system as a genuine alternative to the use of private vehicles”;* and
  - *Policy TR9: “All new development shall provide cycle parking to Oxfordshire County Council Standards”.*
- 2.6.4 Housing allocations for Bicester within the NSCLP have been made with regard to the Structure Plan and central government guidance in making, *“the best use of previously developed land and in reducing the need to travel particularly by private car”.*
- 2.6.5 South West Bicester was identified as a mixed-use urban extension within the NSCLP. Policy H13 sets out a framework for development in the area.
- 2.6.6 Insert 2 of the NSCLP identifies the allocation of employment to the east of the A41 and strategic footpaths and cycle links through South West Bicester. Policies H13 and TR31 detail the ability of

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South West Bicester to meet the overarching sustainable transport objectives of national policy through to local planning policy.

- 2.6.7 Land use and transport policies are stated to be integrated and support the strategic aims of the Oxfordshire Local Transport Plan. Chapter 6 of the NSCLP sets out transport policies in relation to the development of local transport infrastructure in the Cherwell District.
- 2.6.8 Policy TR5 advocates that development should not compromise the safe movement and free flow of traffic, whilst Policy TR6 seeks to facilitate the provision and operation of an effective public transport system as a genuine alternative to the use of private vehicles.
- 2.6.9 Other transport policies of relevance to the proposed development at South West Bicester include Policy TR11 regarding parking provision, Policy TR19 for roads in residential areas as well as Policies TR26 and TR27 regarding highway schemes in Bicester.
- 2.6.10 The latter two policies are of particular importance for the development at South West Bicester in their detailing of the A41/A4095 link road and the associated roads from the A41 to Howes Lane / Middleton Stoney Road. The A41/A4095 link road scheme, also known as the South West Bicester Perimeter Road, was successfully delivered ahead of schedule and was totally funded by Countryside Properties (Bicester) Ltd.

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## 3 Existing Conditions

### 3.1 Site Location

- 3.1.1 The development is located on the south western edge of Bicester, as shown in **Figure 1**. At its northern boundary, South West Bicester is bounded by Middleton Stoney Road, while to the east is the A41 Oxford Road. To the south lies the Chesterton to Wendlebury Road and Gagle Brook, while the A4095 forms the western boundary of the site.

### 3.2 Journeys on Foot and by Cycle

- 3.2.1 The routes of established footpaths and cycleways near the site are shown in **Figure 2**. The Figure shows that the majority of the town is located within a radius of approximately 2km from the centre of the development, which is considered within IHT guidance, (*'Guidelines for Providing for Journeys on Foot'*) to be a reasonable and a considered journey to be undertaken on foot.
- 3.2.2 In addition to the highlighted routes (Figure 2), there are footways adjacent to the majority of local roads near the development as well as a number of footpaths providing access towards Bicester town centre. Middleton Stoney Road has a footway along its northern side from Howes Lane to King's End, varying in width between approximately one and two metres. From the Middleton Stoney Road / Oxford Road / King's End roundabout towards Bicester town centre, pedestrians can follow a footway with street lighting to reach a pelican crossing just south of King's End / King's Avenue junction. A footway of two metres on the eastern side of King's End and Church Street connects the pelican crossing to Bicester town centre via Church Street.
- 3.2.3 Pedestrians wishing to access the north of Bicester town centre can follow the footway on the western side of King's End / Queen's Avenue. A pelican crossing between Kingsclere Road and King's End provides a crossing point to the eastern side of Queen's Avenue. A footway of up to 3.5 metres in width links to the crossing point towards St. John's Street. A pedestrian refuge crossing at the junction with Manorsfield Road allows pedestrian access to the northern end of Bicester town centre.
- 3.2.4 To the east of the development, pedestrian links to the Tesco superstore and Bicester Village Retail Park are provided along the eastern side of Oxford Road. These are two metres wide and continue along both the northern and southern aspects of Pingle Drive.
- 3.2.5 Route 51 of the national cycle network links Old Place Yard with the garden centre on A41 Oxford Road via Roman Road. An existing toucan crossing located on the eastern arm of the A41 roundabout and an uncontrolled pedestrian crossing at the A4421 / Pingle Drive roundabout allows both pedestrian and cyclists to cross these junctions safely.

### 3.3 Existing Bus Services

- 3.3.1 Bus services principally operate along the A41 Oxford Road, adjacent to the eastern side of South West Bicester. Further services operate within the Highfield residential estate to the north and along A4095 Middleton Stoney Road, following the northern boundary of the development.
- 3.3.2 Bus services that operate within close proximity of South West Bicester are depicted on **Figure 3** and are summarised in **Table 3.1** overleaf.

Table 3.1: Existing Bus Services near South West Bicester

Service Number	Bus Operator	Bus Route	Service Days	Bus Frequency
8	United Counties	Bicester – Weston Favell	Mon – Sat	Every 60 minutes
16	The Shires	Aylesbury – Bicester	Mon – Sat	5 Daily
18	Langston & Tasker	Aylesbury – Bicester	Mon – Fri	1 Daily
18	Langston & Tasker	Buckingham – Bicester	Mon - Fri	4 Daily
21	Grayline	Bicester Town Centre – Greenwood Estate	Mon – Sat	Every 30 minutes
22 / 23	Heyfordian Travel	Langford – Bicester (Caversfield Estate)	Mon – Sat	Every 60 minutes
25	Heyfordian Travel	Oxford / Woodstock – Bicester	Mon – Sat	2/3 Daily
25a	Heyfordian Travel	Oxford – Bicester	Mon – Sat	Every 60 minutes
37	Heyfordian Travel	Bicester – Hardwick – Finmere	Tues & Weds	2 Daily
81	Heyfordian Travel	Bicester – Banbury	Thurs – Sat	2 Daily
81	Heyfordian Travel	Somerton – Bicester	Thurs – Sat	1 Daily
81a	Heyfordian Travel	Bicester – Ardley – Fewcott – Fritwell – Ardley – Bicester	Tues & Weds	2 Daily
94	Charlton	Charlton On Otmoor – Bicester	Tues & Fri	1 Daily
NS5	Stagecoach Oxford	Bicester – Oxford	Mon – Sat	1 per Evening
S5	Stagecoach Oxford	Oxford – Bicester	Mon – Sat	Every 60 Minutes
T1A	Tex Coaches	Banbury – Bicester (Village Outlet)	Mon – Sat	4 Daily
X5	United Counties	Cambridge – Oxford	Mon – Sun	Every 30 minutes
X81	Heyfordian Travel	Bicester – Banbury	Mon – Sat	1 Daily

Source: www.carlberry.co.uk (August, 2012)

- 3.3.3 Bus services operate to Oxford from Bicester with a 35 minute journey time. Service X5, operated by Stagecoach, provides a link from Cambridge to Oxford via St. Neots, Bedford, Milton Keynes, Buckingham and Bicester with a 30 minute frequency, Mondays to Sundays. This service runs along the A41 to the east of South West Bicester, through the bus station before exiting to the north of Bicester towards Buckingham.
- 3.3.4 Local services also provide links to Bicester town centre along the B4100 London Road corridor. These include route 94, which then goes on to connect to the town centre with links to a large employment area to the north east of Bicester. Once out of Bicester, these services provide links to Langford and Oxford.

## 3.4 Travel by Rail

- 3.4.1 The local rail network is illustrated in **Figure 3**. As can be seen, Bicester has the benefit of access to two rail stations. Bicester North station is located 950 metre north of the town centre, while Bicester Town station is located 800 metres to the east of South West Bicester.

- 3.4.2 Bicester North rail station offers passengers a good range of facilities including a coffee and snack shop, cycle storage and ticket machines. There is also parking facilities available for motorised traffic on a pay and display basis with the opportunity for the purchase of monthly, quarterly, bi-annual and annual season tickets.
- 3.4.3 Bicester Town station provides undercover cycle storage, with four racks available near the station entrance.
- 3.4.4 **Table 3.2** summarises direct services available from Bicester North and Bicester Town rail stations.

*Table 3.2: Existing Rail Services from Bicester's Rail Stations*

Train Route	Rail Station	Service Days	Train Frequency
<b>Banbury</b> (via Kings Sutton)	Bicester North	Mon – Fri Sat Sun	7 Daily Every 60 minutes Every 60 minutes
<b>London (Marylebone)</b> (via Gerrards Cross, Beaconsfield, High Wycombe, Princes Risborough & Haddenham And Thame Parkway)	Bicester North	Mon – Fri Sat Sun	16 Daily 5 Daily 5 Daily
<b>Birmingham</b> (via Kings Sutton, Banbury, Leamington Spa, Warwick, Hatton, Dorridge & Solihull)	Bicester North	Mon – Sun	Every 60 minutes
<b>Stratford Upon Avon</b> (via Banbury, Leamington Spa, Warwick, Claverdon, Bearley & Wilmcote)	Bicester North	Mon – Sun	Every 2 Hours
<b>Oxford</b> (via Islip)	Bicester Town	Mon – Fri Sat Sun	11 Daily 13 Daily 9 Daily

Source: www.carlberry.co.uk (August, 2012)

- 3.4.5 As can be seen in **Table 3.2**, regular services throughout the day ensure a range of destinations are readily accessible from Bicester North and Bicester Town rail stations. The employment, recreational and shopping opportunities within Oxford are available within a 25 minutes rail journey from Bicester Town station while Banbury offers similar opportunities within a 15 minute rail journey of Bicester North station.
- 3.4.6 Employment opportunities within London are also accessible from Bicester North with 16 services daily terminating at London Marylebone for onward connections within the capital.
- 3.4.7 The opportunity is also there for improved frequencies resulting from the proposed Evergreen III project, which looks at the provision of a spur line to allow direct Oxford to London Marylebone services via Bicester.

## 3.5 Journeys by Car

- 3.5.1 The existing highway network near the development site is illustrated in **Figure 4**. This shows the newly constructed and opened perimeter road linking the A41 and Middleton Stoney Road that was provided as part of the Phase 1 development. The road was officially opened to the public in April 2012 and is subject to a 50 mph speed limit. The link road will go some way to relieving traffic congestion to the south west of Bicester around Bicester Village.

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- 3.5.2 Middleton Stoney Road, which is approximately seven metres wide, runs along the northern boundary of the South West Bicester site. The road provides a link between Bicester and Middleton Stoney, with further links to Junction 10 of the M40 and Lower Heyford. West of Bicester, the road is subject to a national speed limit. This is reduced to 50mph between Howes Lane and Villiers Road and is then further reduced to 30mph. As part of the South West Bicester Phase 1 scheme, the 30mph speed limit will be extended along Middleton Stoney Road to Howes Lane. There is currently a temporary 30mph speed limit on Middleton Stoney Road between Howes Lane and Villiers Road that will remain until the permanent speed limit change is introduced.
- 3.5.3 Street lighting is provided along Middleton Stoney Road between Shakespeare Drive and its junction with King's End / Roman Road.
- 3.5.4 King's End lies to the north of Middleton Stoney Road. This seven metre wide single carriageway road provides a link between the A41 Oxford Road and Bicester town centre via Church Street and Queens Avenue. Shakespeare Drive and Howes Lane provide other routes to the north western areas of Bicester from Middleton Stoney Road.
- 3.5.5 The A41 Oxford Road forms the eastern boundary of the South West Bicester Phase 1 scheme and is a dual carriageway road subject to the national speed limit. A mini roundabout provides access to Middleton Stoney Road and central Bicester, while a roundabout to the south enables access to Tesco and the Bicester Village outlets. A third roundabout on the A41 Oxford Road facilitates access to a petrol filling station. The eastern arm of this roundabout continues as the A41, forming Bicester's eastern perimeter road.
- 3.5.6 To the south, the A41 Oxford Road provides strategic links with M40 Junction 9 and the A34 for longer-distance travel.

## 3.6 Traffic Flows

- 3.6.1 The South West Bicester Phase 1 TA (November 2006) presented baseline traffic flows. At the time of the planning application for the land referred to as the "reserved school site", given the historical nature of the data, it was felt appropriate to offer some validation of the information by carrying out revised manual classified peak hour turning count surveys in 2009. These were carried out between Middleton Stoney Road and A41. In addition to these, 2010 manual classified peak hour turning surveys were undertaken at Middleton Stoney Road / Howes Lane and Middleton Stoney Road / Shakespeare Drive. The baseline traffic flows used for the purpose of this TA are therefore based on the 2009/2010 traffic surveys.

## 3.7 Personal Injury Accidents

- 3.7.1 Personal Injury Accident (PIA) data has originally been obtained to inform the South West Bicester Phase 1 TA (November 2006) covering a five-year period between 01/05/2000 to 30/04/2005.
- 3.7.2 For the "reserved school site" application, new accident data was obtained (covering 04/02/2005 to 20/04/2010), however, given the historic nature of both sets of data, it was felt appropriate to re-visit the accident analysis to understand if there has been any changes in trends.
- 3.7.3 Therefore, new data has been obtained for roads adjacent to the South West Bicester site, namely Middleton Stoney Road, Oxford Road and A41. The data was supplied by Oxfordshire County Council and covers a period from 01/01/2007 to 31/05/2012 (68 months). Within this time, 53 accidents were recorded, only 37 of which affected the key junctions surrounding the South West Bicester Phase 1 development. An accident plot is included as **Appendix A**.



3.7.4 **Table 3.3** below summarises these 37 accidents, while a full summary of the accident analysis is attached in **Appendix A**.

*Table 3.3: Accident Analysis*

Location	Severity		
	Slight	Serious	Fatal
A41 Esso Roundabout	9	1	0
A41 Tesco Roundabout	1	0	0
Middleton Stoney Road / King's End	4	0	0
Middleton Stoney Road /Shakespeare Drive	1	2	0
Middleton Stoney Road / Howes Lane	4	1	1
South West Bicester Access	3	0	0
Perimeter Road (Vendee Drive)	10	0	0

- 3.7.5 **Table 3.3** shows that there have been 10 Personal Injury Accidents (PIAs) at the A41 Esso Roundabout. The single serious accident was a result of drink driving, while most of the slight accidents were a result of shunts. Only one accident involved a motorcyclist.
- 3.7.6 Only a single accident in the period studied was recorded at the A41 Tesco Roundabout. This single accident was a result of a driver not slowing in time at the junction and shunting into a waiting driver.
- 3.7.7 There were four accidents at Middleton Stoney Road and King's End, of which all were slight accidents. Three of these accidents were a result of vehicles failing to give way, with the other being a result of drink driving. All of the accidents involved cars, with one of the accidents also involving a pedal cyclist and one also involving a motorcyclist.
- 3.7.8 The Middleton Stoney Road with Shakespeare Drive had three accidents, of which two were serious. All accidents were due to failure to give way into and out of Shakespeare Drive. Two of the three accidents involved two wheeled vehicles, one with a pedal cycle and one with a motorcycle. The upgrade of this junction into a roundabout, as part of the consented South West Bicester Phase 1 scheme has now been completed, thus enabling vehicles to exit Shakespeare Drive in a safe manner.
- 3.7.9 The Middleton Stoney Road / Howes Lane junction had six accidents in the five-year period. The only fatal accident at this location was due to excessive speeds (approximately 130mph) along Middleton Stoney Road. Two accidents resulted in traffic wanting to U-turn, one of which involved a pedal cyclist, with the remaining collisions were due to failure to give way and right turning movements. The proposed junction improvements at this location committed to as part of the consented South West Bicester Phase 1 scheme will allow for U-turn movements, the absence of which had contributed to two of the accidents.
- 3.7.10 Many of the accidents along the A41 corridor were shunt type accidents related to speed. Many of the accidents along Middleton Stoney Road were a result of turning manoeuvres and failing to give way. A reduction in traffic levels on this road as a result of the implementation of the Perimeter Road, as well as the introduction of traffic calming measures and a 30mph speed limit on Middleton Stoney Road, is likely to minimise the risks in the future.
- 3.7.11 The improvements delivered as part of the South West Bicester Phase 1 consent play a part in managing the movement of vehicles in the area by ensuring that the appropriate design standards are maintained and, in some cases, facilitating movements which are not currently possible (e.g. U-turns). The completion of roundabouts along Middleton Stoney Road allows for the provision of turning movements, while additional accesses on the A41 south of the Esso Roundabout will reduce speeds up to the junction.

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## 4 Development Proposals

### 4.1 South West Bicester Phase 1

4.1.1 The consented South West Bicester Phase 1 scheme included a mix of land uses across South West Bicester comprising of 1,585 residential dwellings, approximately 20,000sqm of B1/B2 employment land, a hotel, a health village, a local centre (including 1,000sqm of employment) and associated amenities, open space, community facilities, a primary school and a secondary school. The location of South West Bicester Phase 1 is shown on **Figure 1**.

4.1.2 A number of transport improvements were proposed to facilitate sustainable travel and mitigate any residual vehicular traffic impact. At the time of writing, the below reflects a summary of the already constructed and opened transport improvements, or those proposals nearing completion:

- A network of pedestrian and cycle connections (constructed);
- Re-routing of existing public transport through the development, with new/extended strategic and local hopper bus services running through the site, potentially connecting to a Park & Ride site (local service due to commence shortly);
- A Residential Travel Plan, including the issue of a Travel Pack to each home owner and the employment of a Travel Plan Co-ordinator (approved);
- A new Perimeter Road connecting the A41 with Middleton Stoney Road along the southern/western fringes of South West Bicester (constructed);
- A new four arm roundabout access from the A41 (constructed);
- A secondary access via a new signalised junction off the A41 (constructed, although not yet in operation);
- Two new priority junctions on Middleton Stoney Road (constructed and in operation);
- A new four arm roundabout at Middleton Stoney Road / Shakespeare Drive (constructed); and
- Further traffic calming measures along Middleton Stoney Road (not yet constructed).

4.1.3 The South West Bicester Phase 1 TA (November 2006) provides more detail on the proposed development and the overall access strategy.

#### 4.1.4 Addition of up to 100 Residential Dwellings

4.1.5 As stated previously, the proposed increase in the scale of South West Bicester by up to 100 additional dwellings represents a 6.3% increase in overall housing numbers.

4.1.6 Whilst no schedule for the increased housing numbers has been finalised at the time of writing, it is anticipated that a broad distribution of these additional houses across much of the site will mean that the impact across the development will be minimal.

### 4.2 Access

4.2.1 The addition of up to 100 residential dwellings will take account of the Design Code and will be in full compliance with standards and guidance. **Figure 5** shows the indicative alignment to the development spine road, which forms the highest hierarchical road within the development.

4.2.2 Whilst the Design Code provides the likely road hierarchy within the site, the actual design of each sub-area is subject to more detailed design as part of the reserved matters application.

4.2.3 The development's spine road has received Approval of Reserved Matters and has been built to base course, or in parts is shortly due for completion. No changes are proposed to the spine road. Additionally, no changes are proposed to the other mandatory alignments, as specified in the Kingsmere Design Code i.e. Secondary Streets (see page 52 of the Code, Figure 3.14).

## 4.3 Car Parking Provision

4.3.1 The proposed parking provision for South West Bicester will be in line with that of the South West Bicester Phase 1 scheme and in accordance with Design Code parking standards. These car-parking standards are shown in **Table 4.1** below.

*Table 4.1: Design Code Car Parking Standards*

Land Use		Maximum Number of Parking Spaces
C3	Residential Dwellings	1 bed – 1 space 2 bed – 1 space 3 bed – 2 spaces 4 bed or more – 3 spaces

4.3.2 The proposed development will consist of up to 100 dwellings, and will be a mixture of different sized properties. The residential parking spaces will be allocated in accordance with these standards and will be within the curtilage, or as close as possible to, each group of dwellings which they serve.

# 5 Trip Generation

## 5.1 Introduction

- 5.1.1 Trip rates have been obtained from the South West Bicester Phase 1 TA (November 2006) which was produced in support of the planning application relating to the original Phase 1 outline planning application. Adjustments to the trip rates included in the original application allowed for affordable housing and internalisation to be taken into account, which is considered appropriate given the housing mix and provision of employment, health and education facilities within the development.
- 5.1.2 The detailed methodology has been set out in the Technical Note on Trip Generation, Distribution and Analysis, which was produced in support of the Phase 1 planning application and is shown in **Appendix B**.
- 5.1.3 The agreed trip rates and methodology from the original South West Bicester application have been used to assess the impact of the additional 100 dwellings throughout the Phase 1 site.

## 5.2 Background Traffic Flows

- 5.2.1 The Perimeter Road was opened in April 2012 and adds significant new infrastructure to the town's highway network. Its effects have not yet been determined by OCC. It is not, however, considered appropriate to undertake traffic surveys until traffic levels have found a new equilibrium.
- 5.2.2 The South West Bicester Phase 1 TA (November 2006) made an estimate for the re-assignment effects of the new road and this has been used in the assessment of increased dwelling provision, covered in this TA.
- 5.2.3 More up-to-date traffic flows, obtained in 2009/2010 in connection with the reserved school site application, have been factored up to 2017 using local growth factors (Tempro) and have had the same re-assignment effects applied in order to take account of the Perimeter Road. This represents a period of five years from planning application. The growth factors are summarised in **Table 5.1** below.

Table 5.1: Growth factors for AM and PM peaks in 2009-2010 and 2010-2017 (urban roads)

Peak Period	Growth Factor	
	2009-2010	2010-2017
AM	1.012	1.068
PM	1.012	1.072

Source: Tempro (programme 6.2; data set version 62; level 38UB2)

- 5.2.4 A number of consented developments, which are likely to affect the area surrounding the South West Bicester Phase 1 site have also been considered, which include:
  - South West Bicester “reserved school site” (46 dwellings);
  - Eco Town Pilot Phase – residential (10/01780/HYBRID)
  - Gavray Drive – residential (10/01667/OUT)
  - Bicester Town Centre (07/00422/F)
  - Talisman Road (09/01595/F)
  - Bicester Business Park (07/01106/OUT)

- 5.2.5 A judgement was made as to the likely effects of the developments from their TAs. In most cases, the area of influence does not extend to the South West Bicester area. In others, it is consented that allowances made in the overall traffic growth factors should allow for the effects of the development as part of the planning applications underpinning Tempro. Traffic flows for these consented developments have been obtained from their respective TAs.
- 5.2.6 The following developments were also considered, however due to their location or current planning status, they are deemed not relevant and have therefore, not been included in the traffic flows:
- Former DLO Caversfield, Skimmingdish Lane (11/00151/F & 11/00805/F)
  - Oxford Diocesan Board Business Park (05/01563/OUT & 09/01659/REM)
  - Graven Hill residential (11/01494/OUT) (not consented)
- 5.2.7 WSP UK Ltd are also aware of the following proposals in the pipeline;
- Albion Land Business Park
  - Tesco relocation / expansion to a larger store
  - Bicester Village Expansion and associated highway works
  - NW Bicester Eco-Town (5,000 dwellings)
- 5.2.8 However, at the time of submission, there are no TAs associated with the above projects, or any current applications. It was confirmed with OCC that these projects were not required to be included in the determination of background or forecasted traffic flows in connection with this application (see **Appendix C** for flows).

## 5.3 Existing and Proposed Trip Generation

- 5.3.1 The South West Bicester Phase 1 TA (November 2006) included the proposed trip rates for the site for the full mix of use. The resultant multi-modal trip generation for the scheme during the morning and evening peak hours is summarised in **Table 5.2**. These trip rates can be found in detail within the submitted TA (November 2006).

*Table 5.2: South West Bicester Phase 1 External Trip Generation (all land uses)*

Mode of Travel	Total AM Peak (08:00-09:00)			Total PM Peak (17:00-18:00)		
	In	Out	Total	In	Out	Total
Non-Car	603	671	1,272	477	389	865
Car Driver	572	607	1,181	622	492	1,113
Car Passenger	253	207	460	248	166	415
Total	1,429	1,485	2,912	1,347	1,046	2,393

Source: South West Bicester Phase 1 TA (November 2006)

- 5.3.2 The additional trips resulting from the increase in density has been summarised in **Table 5.3** based on the information provided above. In turn, the addition of this information to the consented trip generation gives the totals shown in **Table 5.4**.

*Table 5.3: Additional Dwellings Trip Generation Resulting from the Proposed Development*

Mode of Travel	Total AM Peak (08:00-09:00)			Total PM Peak (17:00-18:00)		
	In	Out	Total	In	Out	Total
Non-Car	10	40	49	23	10	33
Car Driver	8	34	42	33	15	48
Car Passenger	3	14	17	14	6	20
Total	21	88	109	71	31	102

Source: Consultant Calculation

*Table 5.4: Total Trip Generation for South West Bicester Phase 1 and the Proposed Development*

Mode of Travel	Total AM Peak (08:00-09:00)			Total PM Peak (17:00-18:00)		
	In	Out	Total	In	Out	Total
Non-Car	613	711	1,321	500	399	898
Car Driver	580	641	1,223	655	507	1,161
Car Passenger	256	221	477	262	172	435
Total	1,450	1,573	3,021	1,418	1,077	2,495

Source: Consultant Calculation

- 5.3.3 As can be seen from **Table 5.3** above, an additional 100 dwellings will result in additional 109 multimodal trips in the morning peak hour and 102 multimodal trips in the evening peak hour. Of these, 42 trips in the morning peak and 48 in the evening peak will be made by car. This increase is not significant and Section 6 of this TA confirms that the performance of local junctions will not be unduly affected.

---

## 5.4 Trip Distribution

- 5.4.1 The trip distribution associated with the development has been assumed to be similar to that employed in the Trip Generation Technical Note (**Appendix B**) prepared to support the South West Bicester Phase 1 TA (November 2006).
- 5.4.2 Traffic flow diagrams in **Appendix C** show the proposed development vehicular trips from the increase in density, for the morning and evening peaks respectively.
- 5.4.3 The development traffic flows have been added to the 2017 forecast baseline traffic flows. The resulting 2017 forecast baseline plus development traffic flows, are also shown in **Appendix C**.

## 6 Development Impact

### 6.1 Context

- 6.1.1 This section considers the traffic impact of the additional residential trips on the road network, following a density increase of up to 100 dwellings on the consented South West Bicester Phase 1 site. The year of assessment of 2017, represents five years after the registration of the planning application.
- 6.1.2 A comparison between the Do Minimum (completed South West Bicester Phase 1) and the Do Something (with density increase) scenarios has been undertaken based on the cumulative information presented in Section 5 of this report.

### 6.2 Comparative Analysis

- 6.2.1 A comparative assessment has been made between the existing consented level of traffic at each junction and that which would occur as a result of the increased density proposals.
- 6.2.2 The resulting number of vehicular trips at a number of key junctions is set out below.
- 6.2.3 Access Junctions
- 6.2.4 **Table 6.1** below shows the outcomes of the comparative analysis for the three main junctions providing access to the development.

*Table 6.1 Traffic flows for South West Bicester Phase 1 with the proposed density increase*

Junction	Forecast Base Flow (2017)		Increased Development Flows		Total Flow (2017)		Proportion of Total Flow (%)	
	AM	PM	AM	PM	AM	PM	AM	PM
Northern South West Bicester Access / B4030 / Shakespeare Drive	1,369	1,488	25	30	1,393	1,515	1.24%	1.39%
Southern South West Bicester Access (from Perimeter Road)	655	670	4	4	670	689	0.20%	0.19%
South West Access / A41 Oxford Road	2,178	2,631	12	14	2,191	3,833	0.34%	0.34%

- 6.2.5 **Table 6.1** shows that the proportion of traffic flows associated with the additional 100 dwellings is no more than 1.39% at the access junctions. This provides a concrete indication that these junctions are not subject to an increase in traffic flow which would give rise to any performance issues.
- 6.2.6 Surrounding Junctions
- 6.2.7 The impact of the development at the other locations, shown in **Table 6.2** overleaf, confirms that the change in traffic flows is not significant.



Table 6.2 Traffic flows for South West Bicester Phase 1 with the proposed density increase

Junction	Forecast Base Flow (2017)		Increased Development Flows		Total Flow (2017)		Proportion of Total Flow (%)	
	AM	PM	AM	PM	AM	PM	AM	PM
SW Perimeter Road / A4095 Howes Lane	1,048	1,039	11	22	1,059	1,060	0.07%	0.12%
SW Perimeter Road / B4030 Middleton Stony Road	1,914	2,321	16	19	1,929	2,339	0.10%	0.11%
A41 Oxford Road / B4030 Middleton Stony Road / Queen's Avenue	2,325	2,515	5	7	2,330	2,521	0.03%	0.04%
A41 Oxford Road / Pingle Drive	2,384	3,271	1	2	2,385	3,273	0.01%	0.01%
A41 Oxford Road / Petrol Filling Station Roundabout	4,049	4,543	5	6	4,055	4,550	0.03%	0.03%
SW Perimeter Road / A41 Oxford Road	3,987	4,394	19	23	4,006	4,417	0.12%	0.13%

6.2.8 As can be seen from **Table 6.2** above, the additional trips generated by the development are not considered to have a significant impact upon the performance of the surrounding junctions, and on this basis, it has been judged that junction capacity assessments would not be required to confirm this assertion.

## 6.3 Public Transport

- 6.3.1 The public transport service promoted as part of the consented South West Bicester Phase 1 scheme makes provision for a local bus service between South West Bicester and Bicester town centre. This will operate at a 15 minute frequency throughout the day (with four buses per hour).
- 6.3.2 Additionally a strategic service linking South West Bicester to Oxford (Inter-Urban Service) will be provided off the back of an existing bus route. This will operate at a 30 minute frequency. Therefore, the combination of the two public transport strategies will result in both a 15 and 30 minute bus frequency that will benefit the new and existing patrons travelling to and from Bicester.
- 6.3.3 In addition, convenient connections will be provided to ensure access is available to the existing bus services along the A41.
- 6.3.4 The increase in density of the site would not involve a change to the bus strategy agreed in the original South West Bicester TA. On-going discussions with OCC and the operator on implementation are progressing with a view to receiving the best possible outcome for the development.
- 6.3.5 Based on the number of non-car users from **Table 5.3** and the information presented in the Trip Generation Technical Note (**Appendix B**) prepared to support the South West Bicester Phase 1 TA (November 2006), there will be 16 additional bus passengers in the morning peak and 11 in the evening peak as shown in **Table 6.3** overleaf.

Table 6.3: Non-car user trip generation

	Proportion	AM Peak			PM Peak		
		In	Out	Two Way	In	Out	Two Way
Walk	42%	4	17	21	10	4	14
Cycle	28%	2	10	12	6	3	8
Public Transport	33%	3	13	16	8	3	11

Source: South West Bicester Phase 1 TA (November 2006)

- 6.3.6 Whilst the increase in passengers are not expected to be significant enough to warrant any changes in service specification (e.g. increases in frequency), the increase will be beneficial towards further supporting the viability of public transport in offering a true range of choice and in promoting the development as a sustainable place to live.

## 6.4 Travel Plan

- 6.4.1 It is anticipated that the development would be covered by the agreed Residential Travel Plan for South West Bicester and that the range of sustainable transport measures will be made available to these new residents. The Travel Plan is at an advanced state of implementation and will continue to form the focus of travel demand management.

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## 7 Conclusions

### 7.1 Summary

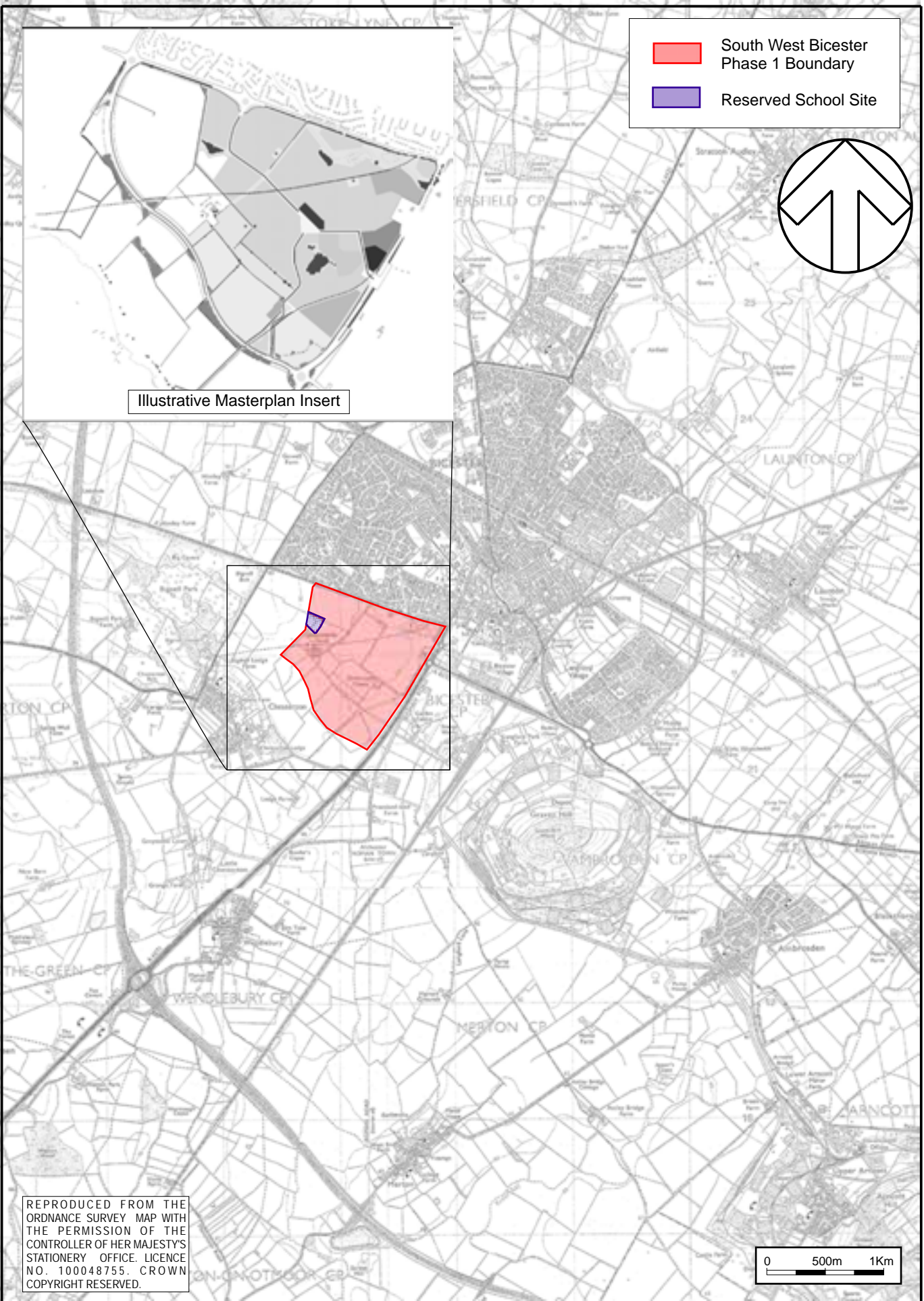
- 7.1.1 This TA has considered the transport implications which would arise from the development of up to 100 additional residential dwellings within the consented South West Bicester Phase 1 development (Planning Application Reference 06/00967/OUT).
- 7.1.2 The agreed Design Code for the South West Bicester Phase 1 scheme, which follows the ethos of the Manual for Streets guidance, will ensure that the connections to/from South West Bicester will promote permeability, connectivity and prioritise sustainable modes of transport.
- 7.1.3 This report has set out the multi-modal trip generation resulting from the development, which for cars, results in a small increase in vehicular traffic. This has resulted in a small increase in vehicular movements, which it has been demonstrated would not have a significant impact on the performance of local junctions.
- 7.1.4 Consideration has also been shown that the proposed increase in density resulting from up to 100 additional dwellings would have positive implications for the promotion of sustainable transport, including further improving the viability of bus services and furthering the aims of the Residential Travel Plan.
- 7.1.5 The package of infrastructure provided within the South West Bicester Phase 1 scheme has been shown to be sufficient to support the proposed increase in density and provides further justification on the merits and benefits of the scheme to allow OCC, as the highway authority, to sanction the proposals and thereby further contribute to CDC's housing and economic objectives.

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# Figures

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**FIGURE 1**  
**Site Location**



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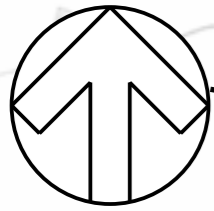


TITLE:  
  
SITE LOCATION

FIGURE No:  
  
1

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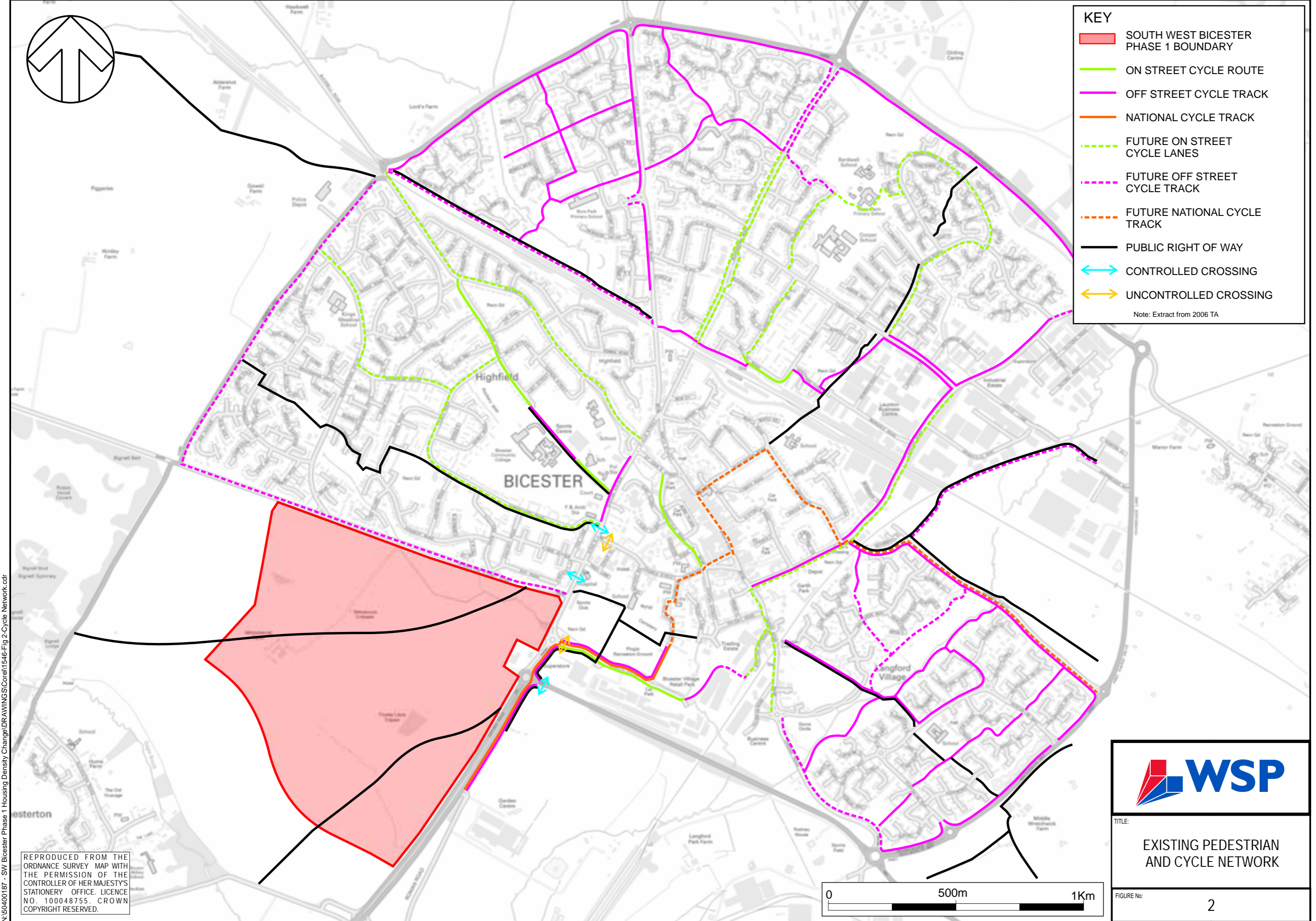
**FIGURE 2**  
**Cycle Network**



**KEY**


- SOUTH WEST BICESTER PHASE 1 BOUNDARY
- ON STREET CYCLE ROUTE
- OFF STREET CYCLE TRACK
- NATIONAL CYCLE TRACK
- FUTURE ON STREET CYCLE LANES
- FUTURE OFF STREET CYCLE TRACK
- FUTURE NATIONAL CYCLE TRACK
- PUBLIC RIGHT OF WAY
- CONTROLLED CROSSING
- UNCONTROLLED CROSSING

Note: Extract from 2006 TA



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TITLE:  
**EXISTING PEDESTRIAN  
AND CYCLE NETWORK**

FIGURE No: **2**
























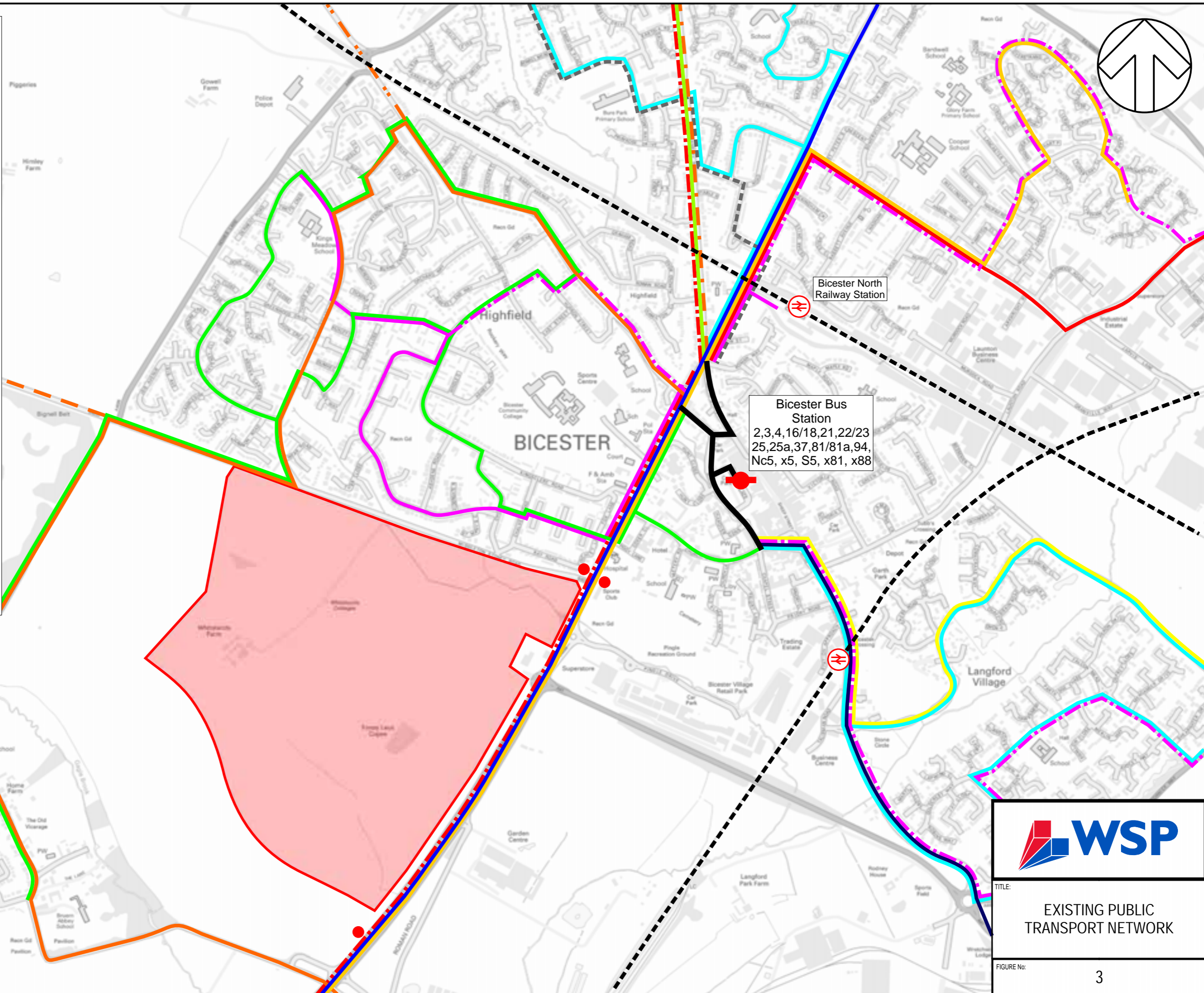
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**FIGURE 3**  
**Public Transport Network**

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**KEY**


-  South West Bicester Phase 1 Boundary
- Route Number**
-  2
-  3
-  4
-  16/18
-  21
-  22/23
-  25
-  25a
-  37
-  81/81a
-  94
-  NC5
-  S5
-  X5
-  X81
-  X88
-  Railway Line
-  Railway Station
-  Bus Stop
-  Bus Station



**Bicester Bus Station**  
 2,3,4,16/18,21,22/23  
 25,25a,37,81/81a,94,  
 Nc5, x5, S5, x81, x88

**Bicester North Railway Station**

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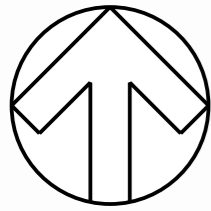



TITLE:  
**EXISTING PUBLIC  
 TRANSPORT NETWORK**

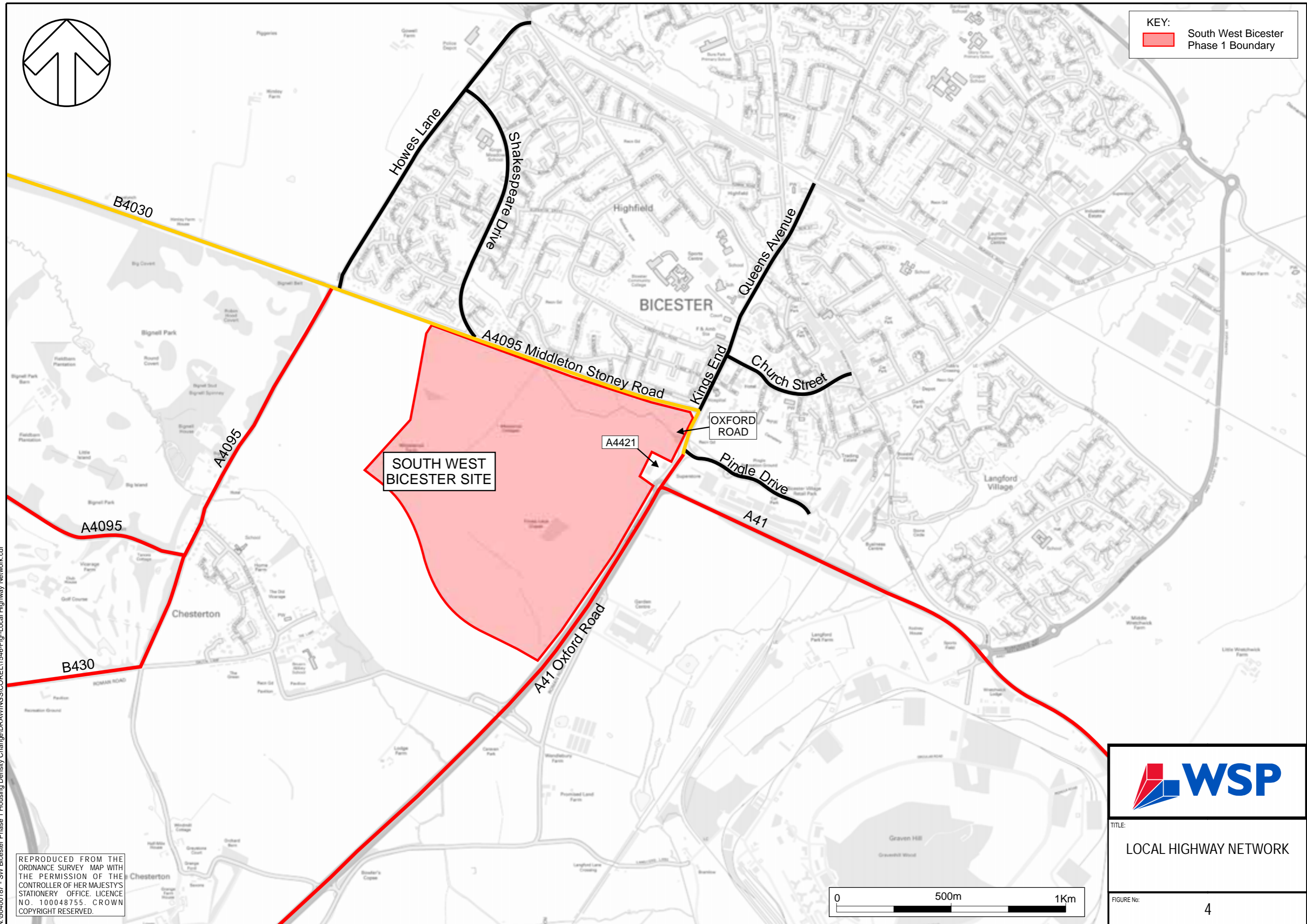
FIGURE No: **3**

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**FIGURE 4**  
**Local Highway Network**

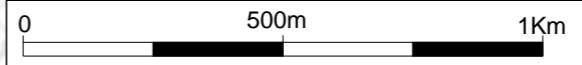


KEY:  
 South West Bicester  
 Phase 1 Boundary



N:\50400187 - SW Bicester Phase 1 Housing Density Change\DRAWINGS\CORE\1546-Fig-Local Highway Network.cdr

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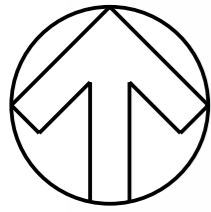


TITLE:  
 LOCAL HIGHWAY NETWORK



FIGURE No:  
 4

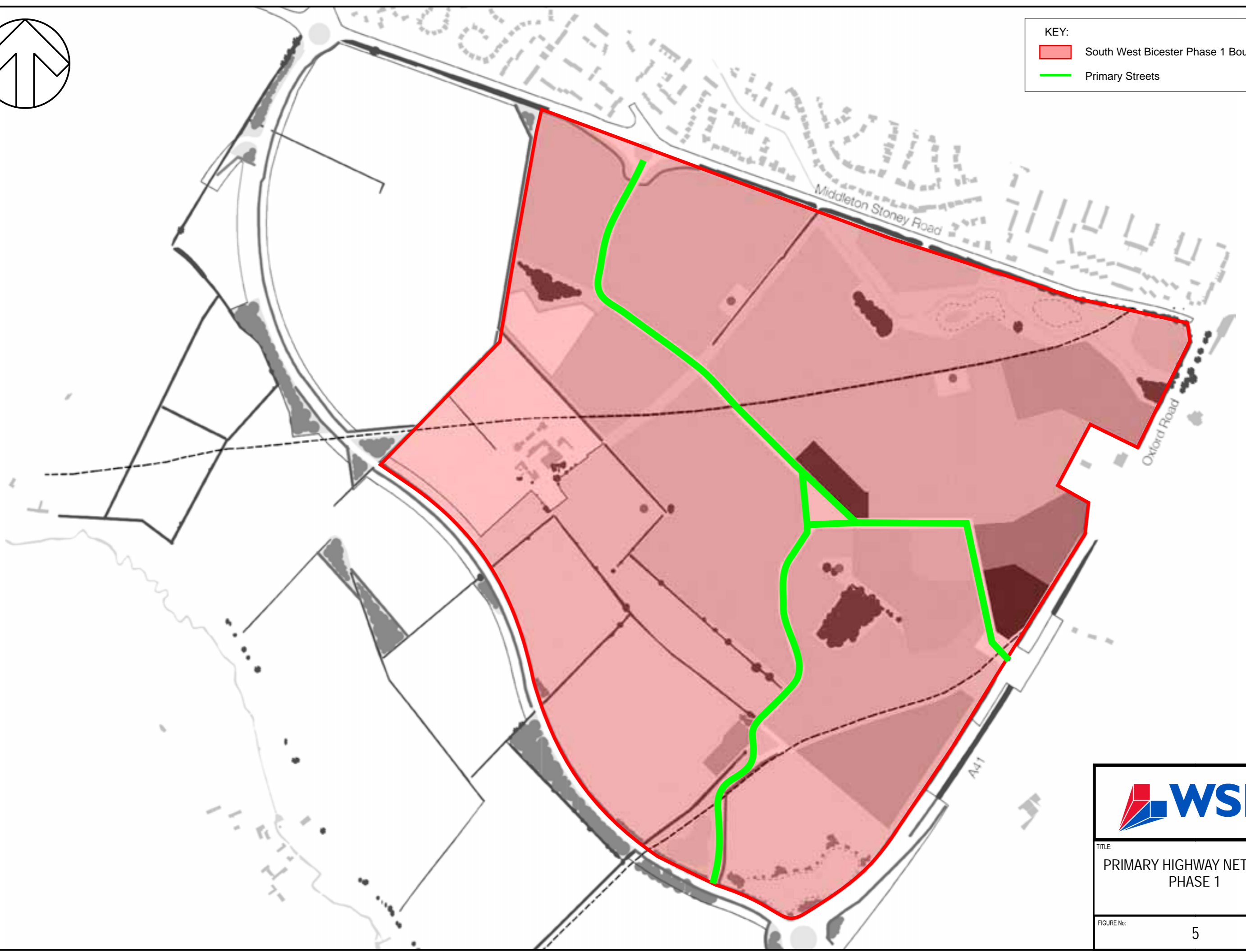
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**FIGURE 5**  
**Street Hierarchy**




KEY:

-  South West Bicester Phase 1 Boundary
-  Primary Streets



N:\50400187 - SW Bicester Phase 1 Housing Density Change\DRAWINGS\COREL\1546-Fig 5-Street Hierarchy



TITLE:  
PRIMARY HIGHWAY NETWORK  
PHASE 1

FIGURE No:  
5

---

# Appendices

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**APPENDIX A**  
**Accident Plot**



Accidents between dates:  
01/01/2007 and 31/05/2012

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## **APPENDIX B**

### **Trip Generation Note**