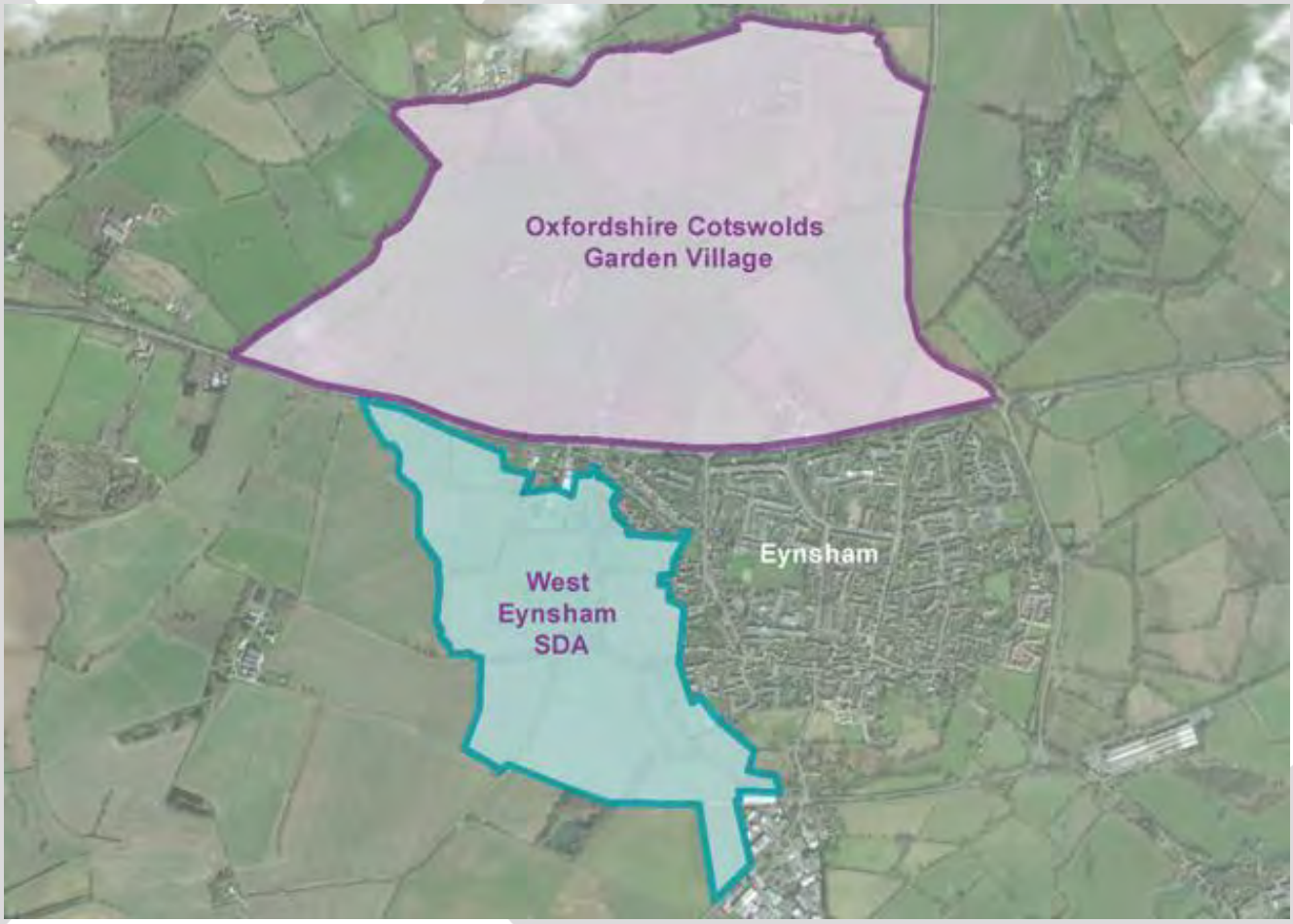
Oxfordshire County Council

Cotswolds Garden Village AAP & West Eynsham SPD: Developing the Transport Evidence Base

Report



Wood Environment & Infrastructure Solutions UK Limited – May 2019

Report for

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Document revisions

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1	Draft Baseline Report	09/11/18
2	Working Draft	19/11/18
3	Revised Draft	27/02/19
4	Revised Draft	14/05/19
5	Final Report	15/05/19

Contents

1. Introduction

1.1 Background

Wood Environment & Infrastructure Solutions UK Limited (Wood) has been appointed by Oxfordshire County Council (OCC) to support the development of a transport evidence base to inform the Oxfordshire Cotswolds Garden Village Area Action Plan (AAP) and the West Eynsham Supplementary Planning Document (SPD). The location of the two sites is shown in **Figure 1.1**.

The Oxfordshire Cotswolds Garden Village has government backing and is one of the 14 sites announced in January 2017 as part of an expansion of the garden towns programme[1]. The Garden Village Strategic Location for Growth (SLG) and the West Eynsham Strategic Development Area (SDA) are located in Eynsham Parish in West Oxfordshire and are identified as Allocated Sites within the West Oxfordshire Local Plan 2031, which was formally adopted in September 2018.

In total, the site allocations have the potential to provide around 3,200 new homes, a 40ha Science Park generating a significant number of new jobs, additional primary and secondary education provision and additional service facilities. The sites will benefit from a new Park and Ride of up to 1000 spaces which will be located to the west of the A40/Cuckoo Lane junction and which will be funded largely through the 'Local Growth Fund' administered by Central Government. Collectively this will create the opportunity for integrated housing, employment and transport hubs, with the Garden Village providing a new rural service centre.

The development of an AAP for the Garden Village and a SPD for the West Eynsham SDA by West Oxfordshire District Council (WODC) will provide planning frameworks for the sites to guide development proposals and delivery, and to ensure integration with each other and other initiatives in the area.

The sites are served by the A40, a key gateway into Oxford and part of the road network artery for the "knowledge spine". The A40 currently carries high volumes of traffic per day which exceeds existing road capacity levels and congestion and queuing on the A40 is typical throughout the day, particularly in the morning and evening peak hours.

In acknowledgement of the constraints to economic growth caused by the congestion, and increased pressure due to future growth, OCC has identified a long-term A40 Strategy to be implemented in two phases, known as the 'A40 Science Transit' scheme and 'A40 Smart Corridor', which comprise a combination of highway and public transport improvements.

A transport evidence base is now needed to identify the transport infrastructure required to support the delivery of the two Eynsham development sites which will need to:

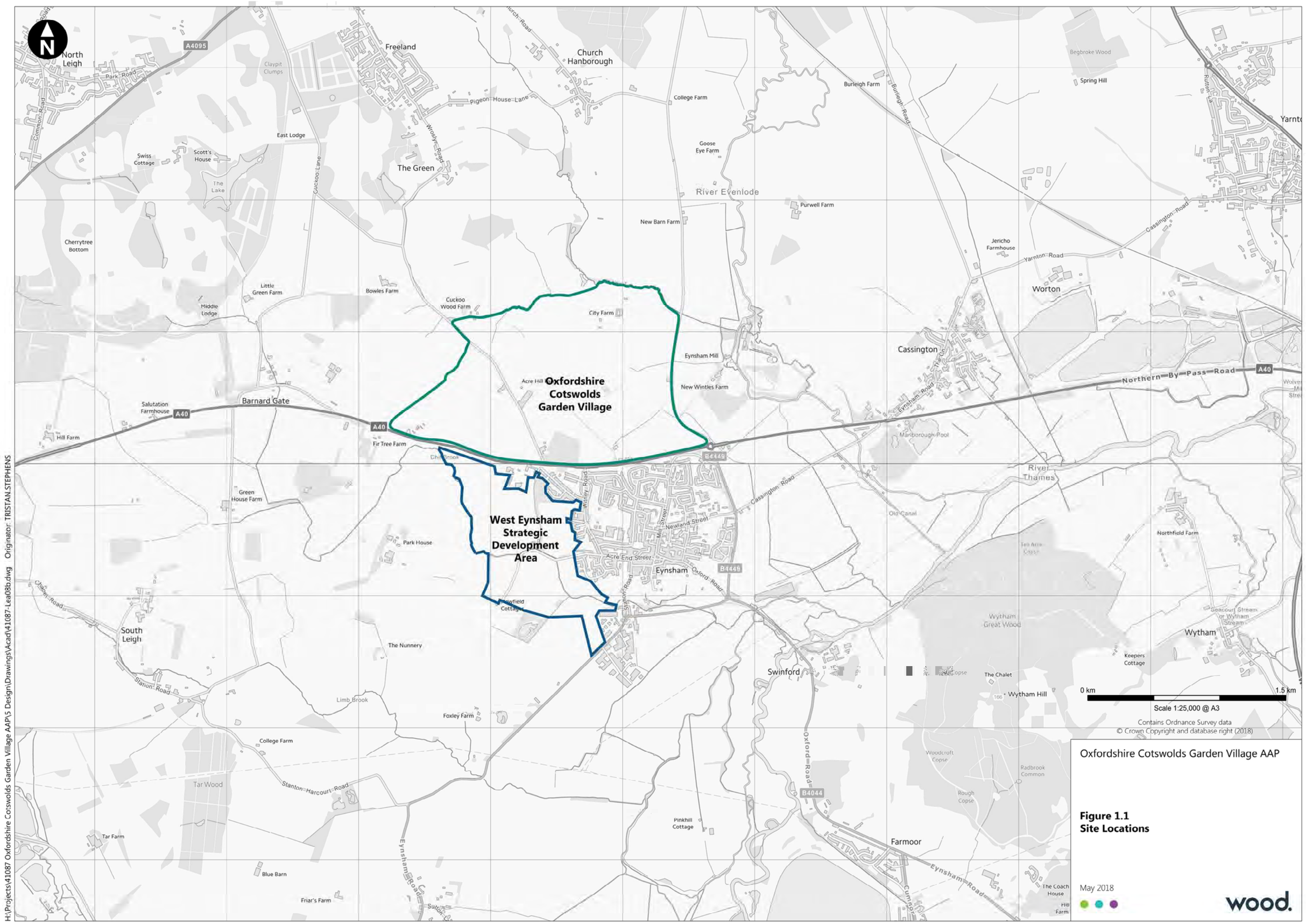
- Consider connectivity opportunities and assess the cumulative impact of the Eynsham and wider Local Plan development; and
- Take account of and build on the A40 Science Transit improvements.

1.2 Developing the evidence base: Study objectives

The objectives of the overall study are to establish the:

- Current situation on the local transport network (the focus of this Report).

Or [1]The Expression of Interest submitted to the Government is available here: https://www.westoxon.gov.uk/media/1539252/West-Oxon-Garden-Village-EoI-July-2016.pdf



Oxfordshire Cotswolds Garden Village AAP

Figure 1.1
Site Locations

May 2018

wood.

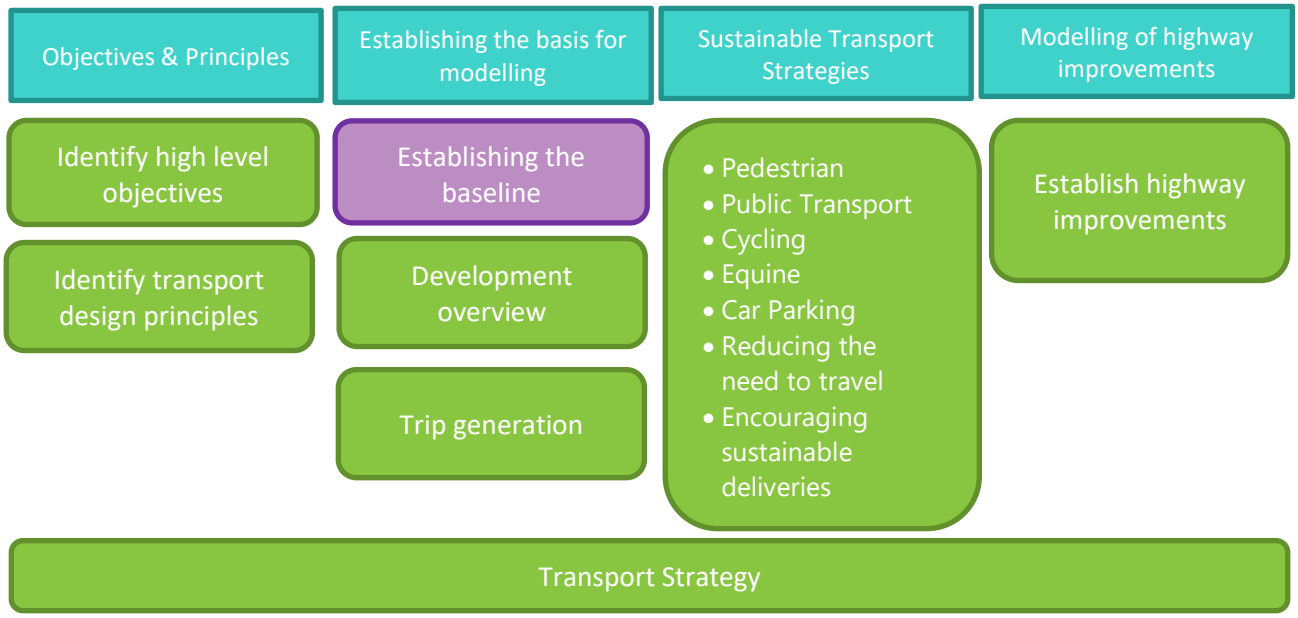
- Trip generation of the West Eynsham SDA and Oxfordshire Garden Village development sites.
- Future pressures on the transport network, taking into account the trips from the developments and the travel demands by wider housing and employment growth planned in West Oxfordshire and surrounding districts.
- Potential solutions to address future pressures on the transport network, and trigger points for these.
- Key transport policies that need to be included within the AAP and SDP.

Specifically, the study will consider the following:

- Access requirements for the Garden Village SLG, the West Eynsham SDA and the proposed Park & Ride to ensure that they are aligned to, and support each other.
- The wider A40 Strategy improvements.
- Provision of appropriate public transport (services and infrastructure) to serve the sites.
- Provision of a comprehensive network for pedestrians, cyclists and equestrians, with good connectivity provided to adjoining areas, including Eynsham.
- Improved links to Hanborough Rail Station and its enhancement as a transport interchange.
- A strategy to reduce the need to travel and encourage and support the use of sustainable transport, which will include initiatives such as a car club, parking controls, sustainable deliveries, public transport, and cycle route connectivity and cycle parking etc.
- Identification of highways improvement measures to mitigate the impact of traffic associated with the developments.

1.3 Study Deliverables

In accordance with the brief, the study comprises a number of stages, as illustrated below. This document reports on 'Establishing the Baseline'.



2. Policy Review

2.1 Introduction

This section provides a review of the main national and local policy documents that will have a bearing on the Transport Strategy for the West Eynsham SDA and Garden Village SLG.

2.2 National Planning Policy Framework

The Ministry of Housing, Communities and Local Government (MHCLG) published the revised National Planning Policy Framework (NPPF) in February 2019. This superseded previous versions of the NPPF published in 2012 and 2018. In terms of transport, the revised documents see little change from the 2012 document, with sustainable development remaining at the heart of the NPPF.

The NPPF sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced. The NPPF must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. At the heart of the NPPF is a presumption in favour of sustainable development, an approach which should be followed by local planning authorities in their plan-making and decision taking. Decision takers at every level are encouraged, where appropriate, to consider favourably applications for sustainable development and an emphasis is also made within the NPPF on local planning authorities working proactively with applicants at pre-application stage to secure this.

A key statement principle is provided in Paragraph 109 of the Framework:

"Development should only be prevented or refused on highway grounds if there would be an unacceptable Impact on highway safety, or the residual cumulative impacts on the road network would be severe".

Paragraph 108 identifies that plans and decisions should take account of whether:

- Appropriate opportunities to promote sustainable transport modes can be – or have been – taken up, given the type of development and its location;
- Safe and suitable access to the site can be achieved for all people; and
- Any significant impacts from the development on the transport network (in terms of capacity and congestion), or on highway safety, can be cost effectively mitigated to an acceptable degree.

One of the core land-use planning principles is that '*transport issues should be considered from the earliest stages of plan-making and development proposals, so that opportunities to promote walking, cycling and public transport are identified and pursued*.'

The NPPF sets out how sustainable development will be delivered, which includes promoting sustainable transport (paragraphs 102 to 111). Within this section of the NPPF it is recognised that transport policies have an important role to play in facilitating sustainable development, and contributing to wider sustainability and health objectives. The NPPF identifies the need to favour sustainable transport modes to enhance travel choice, and to locate developments that generate significant movement where the need to travel will be minimised and the use of sustainable transport modes can be maximised. The NPPF sets out that all developments that generate significant amounts of movement should be supported by a Transport Statement or a Transport Assessment and a Travel Plan, the latter being identified as a key tool to deliver sustainable transport objectives.

Paragraph 110 identifies that developments should be located and designed where practical to:

- Give priority first to pedestrian and cycle movements, both within the scheme and with neighbouring areas; and second – so far as possible – to facilitating access to high quality public transport, with layouts that maximise the catchment area for bus or other public transport services, and appropriate facilities that encourage public transport use;
- Address the needs of people with disabilities and reduced mobility in relation to all modes of transport;
- Create places that are safe, secure and attractive – which minimise the scope for conflicts between pedestrians, cyclists and vehicles, avoid unnecessary street clutter, and respond to local character and design standards;
- Allow for the efficient delivery of goods, and access by service and emergency vehicles; and
- Be designed to enable charging of plug-in and other ultra-low emission vehicles in safe, accessible and convenient locations.

2.3 West Oxfordshire Local Plan 2031

The West Oxfordshire Local Plan was adopted in September 2018. It sets out a vision of the District in 2031 and provides an overarching framework to guide and deliver that vision.

The Local Plan recognises *'that transport is a key issue for West Oxfordshire and that although there are opportunities for walking, cycling and using public transport, as a rural area, there is a general reliance on private vehicles with around 80% of commuting journeys being made by car. This high level of car use has a number of direct effects including traffic congestion in some locations, which in turn contributes towards poor air quality as well as affecting climate change more generally. Indirectly, a high percentage of car use also affects health, with increasing rates of obesity in Oxfordshire partly attributed to declining levels of activity. Active forms of travel such as walking and cycling, including as part of a journey, have an important role to play in reversing this trend.'*

The new Garden Village north of the A40 near Eynsham is part of West Oxfordshire's vision and is intended to comprise an exemplar development of the highest environmental and design standards based around a mix of compatible uses including housing, employment, transport, new schools and other community and leisure uses. The key transport-related core objectives which guide this vision include:

- **CO1:** Enable new development, services and facilities of an appropriate scale and type in locations which will help improve the quality of life of local communities and where the need to travel, particularly by car, can be minimised.
- **CO10:** Ensure that land is not released for new development until the supporting infrastructure and facilities are secured.
- **CO11:** Maximise the opportunity for walking, cycling and use of public transport.
- **CO13:** Plan for enhanced access to services and facilities without unacceptably impacting upon the character and resources of West Oxfordshire.

Specific transport policies in the Local Plan are set out in 'Section 7 – Transport and Movement', and are summarised below.

- **Policy T1: Sustainable transport** identifies that priority will be given to locating new development with access to a good range of services and facilities and where there are good opportunities for walking, cycling and using public transport and the potential to make further improvements. Good design of new development will also play an important role, including

access to high quality public transport facilities and creating safe and secure layouts to prioritise pedestrian and cycle movements and minimise conflict with vehicles.

- **POLICY T2: Highway Improvement Schemes** includes the need for all developments to demonstrate safe access and an acceptable degree of impact on the local highway network, and where necessary, to mitigate the impact and support planned growth through contributions to highway infrastructure. This includes the Western Spine Road at West Eynsham and strategic improvements associated with the Oxfordshire Cotswolds Garden Village through the AAP process. The policy also acknowledges the A40 improvements between Witney and Oxford.
- **Policy T3: Public transport, walking and cycling** identifies that new development will be expected to contribute towards the provision of new and/or enhanced public transport, walking and cycling infrastructure, or measures to reduce car use where there are limited opportunities for sustainable transport.
- **Policy T4: Parking provision:** States that *'parking in new developments will be provided in accordance with the County Council's adopted parking standards and should be sufficient to meet increasing levels of car ownership.'*

The local policies for Eynsham are set out in 'Section 9 – Eynsham – Woodstock Sub Area' of the Plan, and include the Oxfordshire Cotswolds Garden Village SLG. The Plan sets out a requirement to develop a garden village, based on the Garden City movement of the late 1800s, the general principles of which have been distilled by the Town and Country Planning Association (TCPA). The Plan sets out West Oxfordshire District Council's aims and objectives which include delivery of an exemplar development that combines 21st Century best practice with a practical delivery model replicable elsewhere. The Council's initial aims for the SLG will be refined and developed through the AAP process in liaison with key stakeholders.

The policy for the SLG of relevance to transport and movement is set out below.

- **Policy EW1: Oxfordshire Cotswolds Garden Village SLG (2,200 homes).** Land to the north of the A40, near Eynsham to accommodate a free-standing exemplar Garden Village, the comprehensive development of which will be led by an Area Action Plan (AAP) including:

  a) a working assumption of about 2,200 homes with a balanced and appropriate mix of house types and tenures to meet identified needs including affordable housing.

  b) development taken forward in accordance with key Garden Village principles.

  c) about 40 hectares of business land (B-class) in the form of a 'campus-style' science park.

  d) provision of a new park and ride site (1,000 spaces) with associated bus priority lane along the A40.

  e) the provision of up to two primary schools on site (2FE including nursery) on 2.22ha sites together with financial contributions towards secondary school capacity as appropriate.

  f) the provision of essential supporting transport infrastructure the detail of which will be identified through the AAP process, including mitigating the impact of traffic associated with the development; appropriate consideration of the proposed park and ride, wider A40 improvements and access arrangements for the West Eynsham SDA; the provision of appropriate financial contributions towards LTP4 transport schemes such as the A40 Strategy; provision of appropriate public transport (services and infrastructure) serving the site; and provision of a comprehensive network for pedestrians and cyclists with good connectivity provided to adjoining areas, including a particular emphasis on improving linkages to Hanborough Station, to the proposed Park and Ride and to Eynsham, and on enhancing Hanborough Station as a transport interchange.

Section 9 also includes the West Eynsham SDA. The policy for the SDA of relevance to transport is set out below.

- **Policy EW2: West Eynsham Strategic Development Area (1,000 homes).** Land to the west of Eynsham to accommodate a sustainable integrated community that forms a positive addition to Eynsham, including:

  a) about 1,000 homes with a balanced and appropriate mix of house types and tenures to meet identified needs including affordable housing.

  b) comprehensive development to be led by an agreed masterplan.

  c) provision of a new western spine road funded by and provided as an integral part of the development and taking the opportunity to link effectively with the existing road network on the western edge of the village.

  d) the provision of a new primary school on-site (1.5FE including nursery) on a 2.22 ha site to enable future expansion together with financial contributions towards secondary school capacity as appropriate.

  e) the provision of other supporting transport infrastructure, including mitigating the impact of traffic associated with the development; appropriate consideration of the proposed park and ride, wider A40 improvements and the Oxfordshire Cotswolds Garden Village SLG; the provision of appropriate financial contributions towards LTP4 transport schemes such as the A40 Strategy; provision of appropriate public transport (services and infrastructure) serving the site; and provision of a comprehensive network for pedestrians and cyclists with good connectivity provided to adjoining areas, including the Proposed Park and Ride, Eynsham Village, the Oxfordshire Cotswolds Garden Village, Hanborough Station and into the surrounding countryside.

  f) development to be phased in accordance with the timing of provision of essential supporting infrastructure and facilities.

2.4 Connecting Oxfordshire – Local Transport Plan 4 (2015 – 2031)

The Connecting Oxfordshire Local Transport Plan (LTP) sets out the transport vision for the County and how this will be delivered. The LTP has been separated into volumes, reflecting different areas of policy and strategy.

Connecting Oxfordshire has been developed with the over-arching transport goals to:

- Support jobs and housing growth and economic vitality;
- Reduce transport emissions and meet our obligations to Government;
- Protect, and where possible enhance Oxfordshire's environment and improve quality of life; and
- Improve public health, air quality, safety and individual wellbeing

'Volume 8 Part ii' sets out local area strategies and policies including between Witney and Oxford, whilst Volume 2 sets out the Bus and Rapid Transport Strategy for the County. The latter includes the objective to *'improve bus journey time reliability through implementing measures specific to the section of routes that are inter-urban from those within towns/villages, to ensure operators run frequent and reliable commercial services which are attractive for users, particularly commuters.'* The Bus Strategy highlights the use of the planning system to achieve better co-ordination between land use planning and future bus service provision.

It should be noted that masterplanning to be undertaken as part of development of the West Eynsham SDA and Garden Village SLG will need to consider Residential Road Design Guidance[2] to ensure that housing layouts positively contribute towards encouraging more sustainable travel by minimising the need to use cars particularly for shorter trips to local facilities.

The A40 Route Strategy, also developed as part of 'Connecting Oxfordshire' includes Policy A40 which states that *'we will improve access between towns in West Oxfordshire, and Oxford, including the new employment site at Oxford's 'Northern Gateway' by utilising the Local Growth Fund (LGF) to deliver public transport improvements in the A40 corridor. The proposed scheme* [cited within the LTP] *includes:*

- *An eastbound bus lane between Eynsham Roundabout and the Duke's Cut, Wolvercote;*
- *Westbound bus priority on the approaches to Cassington traffic signals and Eynsham Roundabout;*
- *A Park and Ride car park adjacent to the A40 in Eynsham; and*
- *Junction improvements along the A40 corridor between Witney Bypass and Eynsham Roundabout, including bus priority on the approach to Swinford Toll Bridge.*

The LTP highlights that in implementing this scheme, the current Witney to Oxford cycle route will be retained and will be developed into a part of the Oxfordshire Cycle Premium Route network.

Since *"Connecting Oxfordshire"* was published, and following additional assessment work, the afore-mentioned scheme has evolved with, for example, the eastbound bus lane extending from the Park and Ride (rather than Eynsham roundabout) to the Duke's Cut bridge as part of the LGF-funded A40 Science Transit Scheme. In addition, following further assessment of the feasibility of introducing bus priority on the approach to Swinford Toll Bridge, this element is not now being progressed as a part of the A40 Strategy.

Volume 2 of 'Connecting Oxfordshire' sets out the Active Healthy Travel Strategy for the County which highlights that it is essential that 'new developments are planned with cycling in mind and with facilities to make cycling both convenient and safe. Designing new developments so that cycling is the most convenient transport method for the majority of trips will naturally increase the proportion of journeys made in this way. For large new or expanded housing and employment development sites, we propose establishing the following principles:

- Developers must use and follow the new OCC Design Guidance[3].
- Developers must demonstrate through master planning how their site has been planned to make cycling convenient and safe, for cyclists travelling to and from major residential, employment, education, shopping and leisure sites within 5-10 miles, and also within and through the site.
- Site road network and junctions must be constructed with cycling in mind, including providing space for cycling on main/spine roads through the provision of, as a minimum, advisory cycle lanes of acceptable width.
- OCC may ask developers to fund Quality Audits, to include cyclability audits, so that the local user view is incorporated into new cycle facilities. The Active Travel Steering Group will consider the most effective Quality Audit process to adopt.'

[2] https://www2.oxfordshire.gov.uk/cms/sites/default/files/folders/documents/roadsandtransport/transportpoliciesandplans/newdevelopments/DesignGuidePublication.pdf

[3] 'Oxfordshire Cycling Design Standards: A Guide for Developers Planners and Engineers' and 'Oxfordshire Walking Design Standards: A Guide for Developers Planners and Engineers' were published in Summer 2017. Both documents are available here: https://www.oxfordshire.gov.uk/residents/roads-and-transport/connecting-oxfordshire/active-and-healthy-travel

2.5 Eynsham Neighbourhood Plan 2018 - 2031

The Eynsham Neighbourhood Plan has been prepared by the Eynsham Futures Steering Group (EFSG) on behalf of Eynsham Parish Council. The Plan sets out the strategic context, vision and objectives, and policies and is intended to complement the Local Plan and the Garden Village AAP and West Eynsham SDA SPD.

A neighbourhood plan attains the same legal status as the Local Plan once it has been approved at a referendum, at which point it comes into force as part of the statutory development plan. An initial version of Eynsham Neighbourhood Plan was submitted for independent examination in 2017 and the examiner recommended that this first version of the plan should not go to referendum. The Parish Council has reviewed and refined the Neighbourhood Plan and this was consulted on for 6 weeks until 28 February 2019.

Whilst the ENP does not currently have formal status or statutory weight, the ENP does set out a vision for Eynsham Parish based on the views of its community, and has therefore been reviewed to inform the evidence base.

Aspirations regarding sustainable transport are set out in Policy ENP7, which includes the following points.

- Vehicular access to new developments should be from existing main roads (A40, B4044/4449) and not through existing village roads except for infill developments where there is no alternative.
- Link roads between main roads should have pedestrian and cycle paths where appropriate and suitable.
- Residential streets should be constructed to 20mph or 'Home Zone' principles to complement other village streets that will also have the same speed limits in force.
- Measures to utilise and improve Eynsham's existing public transport should be included in all masterplans.
- Encouragement should be given to the use of alternatives to private cars and documented in Travel Plans as part of the planning application.

Policy ENP14 considers sustainable growth and identifies the need for mitigation of impacts on highway infrastructure such as the A40, B4449, B4044 and the Swinford Toll Bridge.

3. Description of the Oxfordshire Cotswolds Garden Village SLG and West Eynsham SDA Sites

3.1 Introduction

The two development sites pertinent to this evidence base are located adjacent to the village of Eynsham which lies just to the south of the A40, between Witney and Oxford. Eynsham is located just beyond the western edge of the Oxford Green Belt and has an existing population of just over 5,000[4]. It offers a wide range of facilities and services including Bartholomew Secondary School.

The Garden Village and the West Eynsham SDA are separated by the A40, however, there will be interconnectivity between the two sites, including in relation to transport and access arrangements, education and other supporting infrastructure.

This section sets out a brief summary of the two sites based on information provided in the following:

- *West Oxfordshire Garden Village: Expression of Interest*, WODC, June 2016;
- *Oxfordshire Cotswolds Garden Village Issues Paper*, WODC, June 2018 and Consultation Response;
- *West Eynsham SPD Issues Paper*, WODC, July 2018 and Consultation Response; and
- *Draft Eynsham Neighbourhood Plan 2018 – 2031*, Eynsham Parish Council.

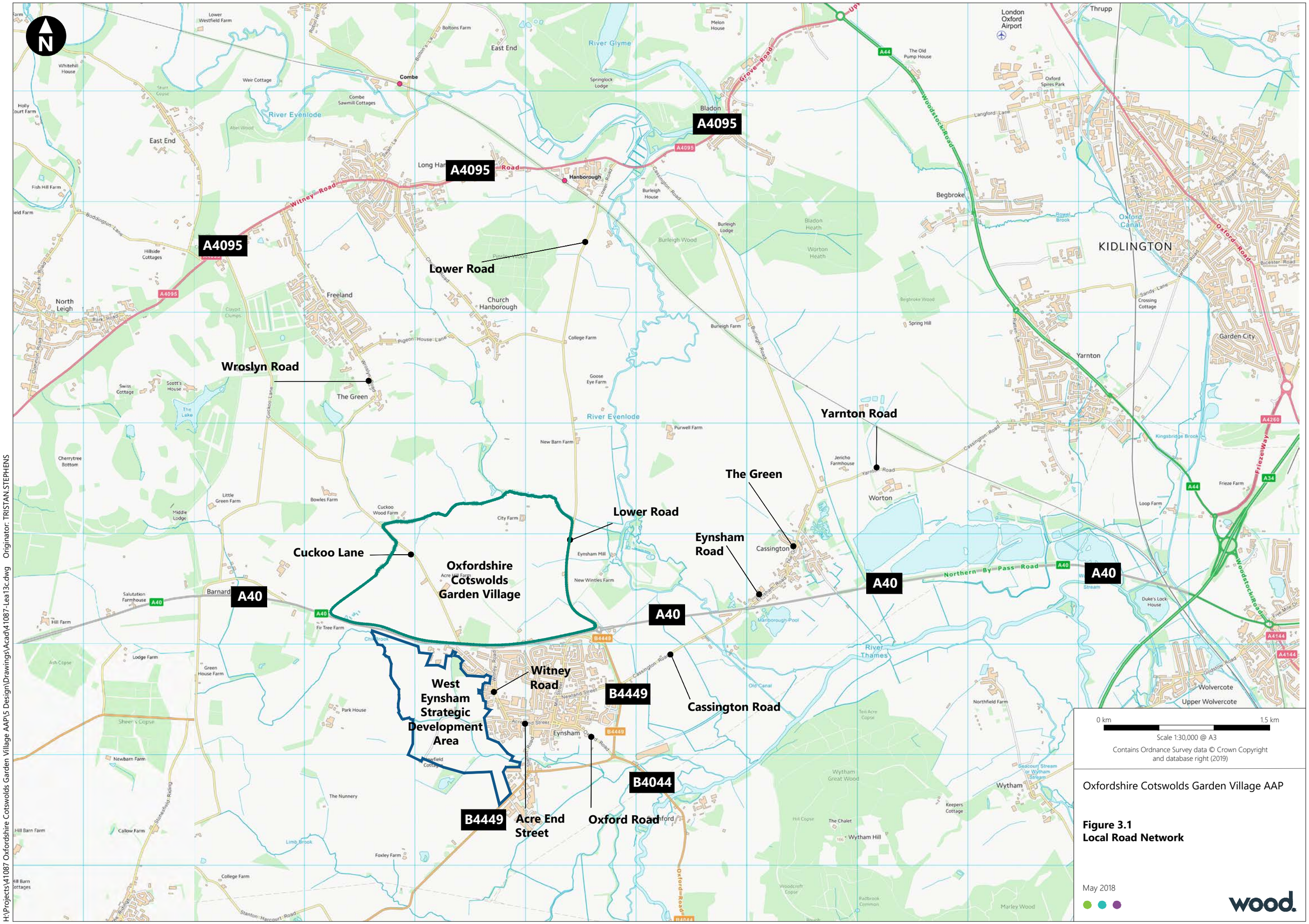
3.2 Oxfordshire Cotswolds Garden Village Site

Site location

Figure 3.1 shows the local road network in the vicinity of the site. The Garden Village SLG is located immediately north of the A40 near Eynsham. Nearby settlements include Cassington, Church Hanborough, Long Hanborough, Freeland and North Leigh. In terms of roads surrounding the site:

- **the southern boundary** of the Garden Village site is formed by the A40;
- **the eastern boundary** comprises Lower Road (which is also the edge of the Oxford Green Belt);
- **the northern boundary** of the site generally follows a watercourse to the north of City Farm; and
- **the western boundary** comprises a public right of way between the A40 and Cuckoo Lane in addition to a section of Cuckoo Lane itself.

[4] West Eynsham Strategic Development Area: Supplementary Planning Document Issues Paper, July 2018.


A4095
A4095
A4095
Lower Road
Wroslyn Road
The Green
Yarnton Road
Cuckoo Lane
Oxfordshire Cotswolds Garden Village
West Eynsham Strategic Development Area
Witney Road
B4449
Cassington Road
B4449
Acre End Street
Oxford Road
B4044
A40
A40
A40
A40
The Green
Lower Road
Eynsham Road
Combe
Bladon
Hanborough
Long Hanborough
East End
Freeland
North Leigh
Church Hanborough
Burleigh Wood
Bladon Heath
Worton Heath
Begbroke
KIDLINGTON
Yarnton
Garden City
Worton
Cassington
Eynsham
Barnard Gate
Wolvercote
Upper Wolvercote
River Glyme
River Evenlode
River Thames
Oxford Canal
London Oxford Airport
Thrupp
Woodstock Road
Oxford Road
Northern By Pass Road
Cassington Road
Eynsham Road
Witney Road
Grove Road
A44
A34
A4260
A4144
A4095
A40
B4449
B4044
0 km
1.5 km
Scale 1:30,000 @ A3
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Oxfordshire Cotswolds Garden Village AAP
Figure 3.1
Local Road Network
May 2018
wood.
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Development proposals

The Garden Village will comprise a comprehensive, mixed use development with a 'working assumption' that the site will deliver around 2,200 dwellings by 2031 (Local Plan Policy EW1) as well as new business space (a new campus-style science park of around 40 hectares; Local Plan policy E1)) education provision (primary and secondary) and community facilities including open space and leisure. The site is also very well-placed for access to the proposed Park & Ride transport hub adjacent to Cuckoo Lane.

The provision of this mix of different uses will help to promote a strong degree of 'self containment' ensuring that residents of the new Garden Village are less dependent on travelling to other locations to fulfil their needs.

In total, the site area is around 215 hectares (531 acres), with the A40 frontage of the Garden Village site east of Cuckoo Lane (from Cuckoo Lane to the Lower Road roundabout) covering a distance of approximately 1.25 km, and with a total frontage of around 2.5km.

Garden Village design principles

There is no standard template for a garden village, but the expectation is that such developments will embed key 'garden city' principles. The Town and Country Planning Association (TCPA) define a garden city as:

'A holistically planned new settlement which enhances the natural environment and offers high-quality affordable housing and locally accessible work in beautiful, healthy and sociable communities.'[5]

As set out in the Local Plan, WODC is seeking to be consistent with the TCPA's garden city principles and with emerging standards for garden villages, and also deliver an exemplar development that combines 21st Century best practice with a practical delivery model replicable elsewhere.

Garden Village AAP Issues Paper Consultation

The 'Oxfordshire Cotswolds Garden Village Area Action Issues Paper' was published in June 2018. The 'Transport and Movement' sections of the Issues Paper are reproduced in **Appendix 1** of this Report.

A public consultation on the Issues Paper was undertaken in June/ July 2018. Key aspects that have been identified by respondents to the *Oxfordshire Cotswolds Garden Village AAP Issues Paper* include:

- Concerns regarding the capacity of the A40 and its ability to support new development unless effective improvements and funding for these are identified.
- The need for interventions at Swinford Toll Bridge and Wolvercote junction which are both seen as major bottlenecks;
- The need for significant improvement at Lower Road, including safe pedestrian and cycling infrastructure;
- Improved public transport linkages, transfers and services to reduce car dependency and congestion on the road network; and
- The need for integrated multi modal travel choice which is accessible, affordable, reliable, safe and aligned with people's travel needs.

A more detailed insight into key responses received to the Issues Paper consultation is provided below:

[5] https://www.tcpa.org.uk/garden-city-principles

Reducing the need to travel: Are there other ways in which the AAP could help **reduce the overall need to travel** [to those identified in the Issues Paper]?

- The overall need to travel will be governed by the fact that these houses [within the Garden Village] are intended to fill Oxford's unmet housing need. It is therefore likely that most of the householders will have jobs in Oxford to which they need to travel;
- The OxIS (Oxfordshire Infrastructure Strategy) is not ambitious enough;
- A few key targets should be set or even the most obvious good ideas won't get turned into reality'.

Reducing dependency on the private car: Should the AAP include within it a specific car parking strategy addressing issues such as parking management, restrictions and standards?

- Major interventions and incentives are needed to do this;
- This should be a core principle of the Garden Village which should uphold higher standards than other developments;
- An integrated transport strategy for Eynsham as a whole is needed to reduce car dependency and promote a modal shift. Safe and convenient connections to the Park & Ride and across the A40 are essential.

Do you think that the garden village should be based on **more robust car (and cycle) parking standards** than standard residential development to help promote a stronger degree of 'modal shift' away from the use of the private car?

- Yes, but incentives are needed;
- It will be a case of multiple small steps with clear targets. Implementation of 'Home Zones' could help minimise the space taken by parked cars by placing them under buildings. Local car and cycle hire all have their place;
- Visitor parking is also needed, and off-street parking for residents.

Do you support the idea of establishing a 'car-club' at the garden village to allow people who do not want to own a car (or a second car) to access one whenever they need to?

- There is ample support, but also recognition that this is only part of an overall solution/strategy that needs to be developed.

Are there any other measures [in addition to those identified in the Issues Paper] which could be introduced through the AAP to help to reduce dependency on the private car?

- Electric charging points in all new dwellings and free electricity charging points for electric cars and bikes for local residents (powered by local renewable energy grid);
- This can only be achieved if a comprehensive strategy is implemented and delivered to make public and sustainable transportation modes attractive, safe, comfortable and convenient. This includes major improvements to rail infrastructure, cycling infrastructure, community bus schemes, electric vehicle infrastructure, and the ability to make easy and efficient changes between modes;
- Limit the number of cars per house to one;

- Prioritise cheap public transport routes to employment areas and safe cycling infrastructure to Hanborough Station, Botley, and along the A40;
- A school bus service that picks up locally (American model);
- A robust dis-incentive to owning and using cars;
- An action group is needed to ensure delivery.

Do you agree that the garden village should be based on the concept of **well-connected, 'walkable' neighbourhoods?**

- Healthy living should be fostered by the garden village's overall design, including higher density and clustering of facilities to facilitate more walking and cycling, and, conversely, to discourage car travel. The road network should be designed accordingly. Car access to Eynsham must be discouraged in all ways;
- A hire bike scheme could be implemented to facilitate local cross-village movement;
- This should be applied to all of Eynsham (including future developments to the west).

In considering the opportunities to **improve or extend existing public rights of way in and around the site**, are there any specific routes that should be given priority (e.g. connections to surrounding villages, into Eynsham, along the A40)?

- **Priority connections with the garden village include:** Eynsham, Hanborough Station, the new Park & Ride, the countryside, transport hubs, surrounding villages, and along the A40;
- **The right-of-way network should be upgraded and developed** to accommodate a range of users (i.e. cyclists, horse riders and pedestrians, including those with mobility support needs);
- **The re-routing of existing paths should be considered** to better meet today's needs rather than retaining those that were appropriate in a very different age.

Do you have any specific **ideas for new routes that should be provided to promote active travel?** Do you support the idea of a new pedestrian/cycle link to Hanborough Station along Lower Road?

- Strong support expressed for improvements along Lower Road between Long Hanborough and the Garden Village, with further connection to Swinford Toll Bridge and the proposed B4044 Community Path to Botley;
- Suggestions for Lower Road include: physically separated cycle/pedestrian path, wider road, resurfaced road, reduced speed limits;
- There is strong support for the above improvements regardless of the Garden Village development;
- Third party land may be needed to deliver the pedestrian and cycle link to Hanborough Station;
- Consideration for a future connection to the Oxford Canal Towpath should be made.

In terms of connections across the A40, are there particular points that should be prioritised for **new or improved crossing points?** Do you have a view on the type of crossing that should be provided (e.g. bridge, underpass, surface-level)?

- Mixed opinions expressed on whether the crossing should be above or below grade;
- There is no support for surface-level crossings unless the A40 is re-routed or sunk below grade;

- The primary concerns are related to school-aged children crossing the A40;
- Landscaped 'green' bridges could link the OCGV and existing village though parklike paths, and bring much-needed green space into Eynsham;
- A40 crossings should be limited (i.e. one bridge for pedestrians and cyclists);
- Any connection over/under the A40 must be up to British Horse Society standards.

Are there are any other factors we have not mentioned [in the Issues Paper] that the AAP should focus on to promote more **'active travel'**?

- The cycleway to Barnard Gate should be improved to include a grass track for horse riders;
- Roundabouts must meet Oxfordshire County Council's Walking Design Standards and Cycling Design Standards;
- Cycling and walking should be considered separately;
- Development within the Garden Village should make appropriate contributions towards the implementation of the B4044 Community Path;
- Active transport is more attractive with lower speeds for motorised traffic. 20mph in residential areas is essential;
- Cycleways and footpaths need to be wide enough not only for mobility scooters, but also for kiddie trailers for transporting several children with one bike;
- Active travel routes should be surrounded by natural countryside to promote exercise, improve health and wellbeing, and inter-generational interaction with other walkers and cyclists.

Do you have any thoughts on **the proposed park and ride** site west of Cuckoo Lane acting as a comprehensive 'transport hub' supported by a range of complementary uses such as 'click and collect'?

- The Park & Ride is in the wrong location and should be closer to Witney;
- The P&R will have limited effect because separated bus lanes are discontinuous and do not run in both directions;
- Limited bus services will reduce effectiveness;
- It will not address those who travel beyond Oxford and/or whose journeys originate further west.

What new bus services if any do you think should be facilitated by the AAP/garden village?

- Direct/express routes to: Headington/hospitals, east Oxford, Oxford City Centre, Hanborough Station;
- Local 'shuttle' routes between Garden Village and: West Eynsham, Eynsham village centre, Hanborough Station;
- Increased service capacity and frequency of existing routes;
- Subsidies for new routes and community transport schemes should be given.

How can the AAP help to improve the **attractiveness of existing bus services**?

- Subsidised fares;
- Improved reliability of services;
- Improved waiting areas (larger bus shelters that include seating);
- A loyalty program for Eynsham/Garden Village residents to incentivise uptake;
- Avoid placing stops on the A40 (i.e. locate on smaller roads instead).

Apart from the potential provision of a new pedestrian/cycle link to Hanborough Station along Lower Road, are there any other ways in which **greater use of Hanborough Station** could be encouraged?

- Dual the rail track to allow a 20 minute frequency to Oxford and Paddington. Without this, Oxford will still be regarded as the primary station for residents from the Garden Village;
- A subsidised bus service to Hanborough Station;
- Free and extensive parking at the station;
- Locate homes and jobs on the northern part of the garden village site to reduce the walking and cycling distance to station;
- Improve station facilities.

Are there are any other factors we have not mentioned [in the Issues Paper] that the AAP should focus on to promote **increased use of public transport?**

- Accessible transport considerations for elderly, disabled, parents with young children etc.
- Light rail between Witney and Oxford.

Do you agree that the AAP should explore **the use of new technology to assist with 'smart travel'?**

- There was general support for this.

Do you have any specific suggestions as to how new technologies could be usefully employed?

- Timing aids can be used to manage traffic and improve flow through junctions;
- Electric vehicle charging points should be connected to a local renewable energy grid;
- Ample electric vehicle charging points should be included in the development;
- 'A dial-a-ride' scheme could be implemented.
- A web/smartphone based app for real time bus and car club information.

In terms of reducing the need to travel, do you agree that the AAP should emphasise **the use of sustainable deliveries** (e.g. use of parcel drop-boxes, delivery and servicing plans (DSPs) etc.)?

- General support but few responses.

Do you support the use of **robust travel planning** including the potential use of Construction Logistics Plans (CLPs)?

- General support but few responses.

Do you support in principle the provision **two new roundabouts** on the A40? What, if any concerns would you have about this?

- General opposition as this will further impede traffic flow;
- A thorough transport analysis of the options needs to be prepared. It is premature to commit to any solution until this is done.

Should each roundabout facilitate access to both the garden village and the West Eynsham SDA?

- There was general support for this;
- Further transport studies are needed to support this decision.

Do you agree with the draft Eynsham Neighbourhood Plan that consideration should be given to the **rationalisation of existing junctions** (for example the junction of Cuckoo Lane onto the A40)?

- There was general support for this;
- The junction at Cassington should be reviewed;
- The existing roundabout and the new roundabout to the west of Eynsham should be consolidated to serve all settlements. The junctions in-between should be made one-way slips only, with imaginative merging to overcome priorities and divert right-turning traffic.

Do you agree with the draft Eynsham Neighbourhood Plan that improvements should be made to the existing roundabout at the junction of Lower Road and the A40?

- There was general support for this.

Do you support 'in principle' the provision of a connecting 'spine' road running through the Garden Village from Cuckoo Lane to Lower Road?

- There is support for this only after robust network, traffic, environmental and sustainable travel modelling of options for existing and future residents and workers is done and shows a need;
- This is supported if it is a 20 mph traffic-calmed, local access, tree-lined road with pedestrian crossing priority;
- Concerns that it will cut the site completely in two, thereby interrupting public rights of way, cycle paths and connectivity between habitats networks.

Other responses

- The impacts of developments in and around Eynsham, as well as the growth along the A40, need to be addressed in a more comprehensive and meaningful way;
- Witney is the only Growth Town without a rail or segregated busway connection to Oxford. This should be addressed as a priority in the AAP.
- The dualling of the A40 between Witney and Oxford is a minimum requirement; however, even if this is achieved, there will still be significant bottlenecks at key junctions.
- The A40 does not have the ability to support large developments as it is already beyond capacity;
- Major infrastructure changes/improvements should be made before housing is developed;

- Development should be restricted until:
  - Funding for the proposed highway improvements are 100% ring-fenced and separately held to guarantee delivery;
  - District-wide transportation network is improved;
  - Radical and imaginative changes to the A40 are needed: track-based solutions, 'cut-and-covering' the A40 in Eynsham to transform it into a local road that gives more sustainable forms of transportation priority, re-routing the A40 north of City Farm;
  - A40 highway improvements should focus on creating ways for traffic to flow freely past Oxford, including connections to the A34, M40, and A44;
  - Land around the old railway line should be safeguarded from development for future transportation infrastructure.
- Additional cycling infrastructure improvements are also identified in several responses and include:
  - Improvements to Cassington Road;
  - Cycle lane over Swinford Toll Bridge;
  - Relocating the east-west cycle path along the A40 to the other side of hedges, through meadow, and/or along the old railway track;
  - Improved connections to Long Hanborough and Bladon;
  - Connection to the proposed B4044 Community Path.
- Instead of dedicated bus lanes on either side of the A40, the two cycle lanes could be combined on one side of the A40, preferably to the south to minimise the effects of night-time glare, making a new road lane available at minimal cost. A 'smart' road system that uses moveable central barrier could form a tidal priority bus lane in the centre, and along with the Park & Ride, amplify incentives for drivers to use public transportation. The central barrier would be unobtrusive and safe and the road system potentially funded as a test-bed project.
- The speed limit along the A40 should be reduced if both to the north and the south of the A40 are developed in Eynsham;
- Slip roads and bridges could be improved along the A40 to facilitate access to main roads from smaller settlements without impeding the flow of traffic (modelled on the A46 Leicester to Newark);
- The re-opening of the Hanborough Road exit from Eynsham onto the A40 should be considered.

3.3 West Eynsham SDA Site

The West Eynsham SDA site has a total site area of around 88 hectares (217 acres). **Figure 3.1** shows the roads surrounding the site:

- **the northern boundary** of the site follows a combination of the A40 and the existing areas of development at Elm Place and Old Witney Road/Fruitlands.
- **the eastern boundary** of the site follows the existing edge of the built-up area of Eynsham village and generally abuts the rear gardens of residential properties along Witney Road including Bartholomew Close, Willows Edge, Thornbury Road and Merton Close.
- **the southern boundary** follows the vehicular access to Twelve Acre Farm and then along the public right of way which runs east-west along the route of the dismantled railway, before incorporating an

area of proposed employment land (associated with adjoining company Polar Technology) and a small part of the B4449 Stanton Harcourt Road.

- **the western boundary** of the site is in open countryside following the route of the Chil Brook and an existing field boundary.

The site is intended to accommodate a new sustainable and integrated community that will coalesce with Eynsham. The allocation envisages the provision of around 1,000 homes together with supporting infrastructure including a new primary school and a new western spine road which will connect the A40 with the B4449, providing additional route choice for traffic that might otherwise route through Eynsham. The new spine road would provide the main point of vehicular access into the SDA, acting as a primary route from which a series of secondary routes would allow vehicular access to the wider site, thus minimising the potential impact of the development on the existing road network in Eynsham.

It is anticipated that at the northern end of the spine road, connection to the A40 is likely to be provided through a new roundabout which could also potentially enable access into the Garden Village. Further assessment will be undertaken to determine the most appropriate alignment for the road, its size, type and specification, appropriate traffic speeds and how these factors will help to integrate it within the new residential environment.

At the southern end of the spine road, further work is needed to determine the most appropriate arrangements for connecting onto the B4449 Stanton Harcourt Road, which will need to consider the proximity of an adjoining scheduled monument. Land has however been identified as part of the permitted expansion of Polar Technology to potentially allow a connection to be made.

In August 2015, planning permission was granted for residential development of up to 160 dwellings on land west of Thornbury Road Eynsham (application ref. 15/03148/OUT). The site (some 6.94 hectares) is situated adjacent the western edge of the existing settlement, within the eastern boundary of the SDA. In addition, in June 2016 full planning permission (application ref. 15/00761/FUL) was granted on appeal for 77 dwellings on land at Eynsham Nursery and Garden Centre (WODC reference 15/00761/FUL; Appeal. The site (some 2.6 hectares) is situated immediately to the south of the A40, within the northern boundary of the SDA

The **draft Eynsham Neighbourhood Plan**[6] included the following aspirations regarding the West Eynsham site and associated traffic and transport objectives:

- Development on the western side of Eynsham should have one vehicular access point from the A40 and should not cause extra delay to A40 traffic;
- Vehicular access through Eynsham from the west should be strictly limited, although access for pedestrians, cyclists and mobility vehicles should be provided;
- Chilbridge Road and Thornbury Road should provide emergency access with the latter open to buses and local traffic;
- Use of Chilbridge Road (public bridleway) by walkers, cyclists and mobility vehicles from and through the development should be encouraged;
- The new development should be integrated to both the existing village and its services and facilities and to the countryside, including providing specific designated routes; and
- Residential streets should be designed for 20mph speed limits and/or Home Zone principles.

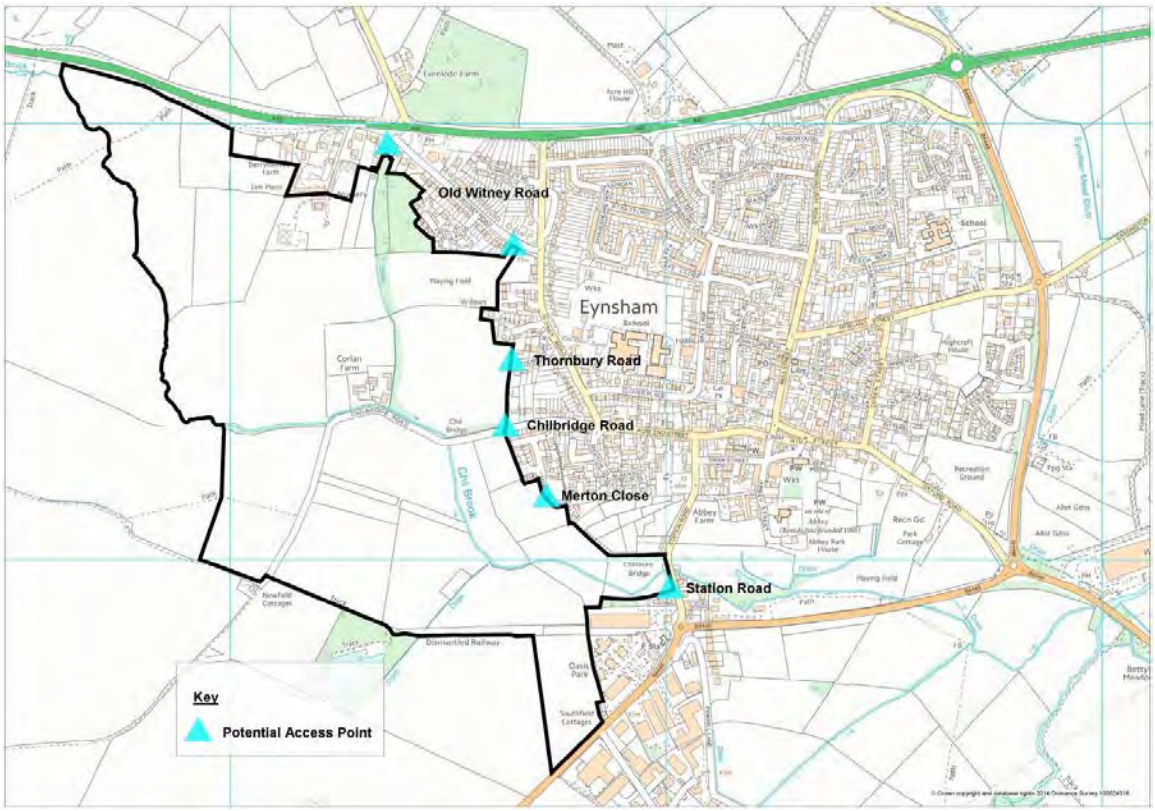
[6] Not currently adopted policy

West Eynsham SDA SPD Issues Paper Consultation

The 'West Eynsham Strategic Development Area: Supplementary Planning Document Issues Paper' was published in July 2018. The Issues Paper identified some of the key existing and potential connection points into the West Eynsham SDA (see Figure 3.2) including:

- **Chilbridge Road (existing):** It is clear from the submission draft Neighbourhood Plan that local residents value the land to the west of the village as it provides access to the open countryside, while Chilbridge Road plays a particularly important role as the main route out to this area from the village. This is a key point of connection for the West Eynsham SDA but further work is required to determine what role it plays i.e. vehicular and pedestrian/cycle or just pedestrian/cycle. For example, the submission draft Eynsham Neighbourhood Plan suggests that this road should be restricted to emergency vehicular access only but this is likely to depend on the overall road layout within the SDA including the role played by the proposed western spine road.
- **Thornbury Road (potential):** As part of the residential scheme already permitted to the west of Thornbury Road (160 new homes) a new vehicular and pedestrian/cycle access will be created from Thornbury Road. The Issues Paper stated that the proposed layout of the scheme allows for subsequent connections into the wider SDA. However, Thornbury Road is in close proximity to Bartholomew School and further work will be needed to determine the level of access for vehicular traffic through this already permitted development.
- **Station Road (existing):** A public right of way comes into the West Eynsham SDA from Station Road just to the north of the roundabout with the B4449. This is a well-used route that provides a good connection to the west along the dismantled railway and onto Chilbridge Road. This connection into the site could play a particularly important role if the draft Eynsham Neighbourhood Plan concept of a linear park is taken forward. The relatively narrow nature of Station Road, the attractive approach it provides to Eynsham from the south and the prevalence of on-street parking present difficulties in terms of creating a vehicular access into the SDA from this point. This will need to be given further consideration as it may, for example, be appropriate and possible to provide some sort of secondary/emergency access at this point.
- **Merton Close (potential):** Merton Close and Merton Court are accessed by road from Acre End Street with a pedestrian/cycle connection onto Chilbridge Road. Subject to further assessment of traffic impact and highway capacity the potential exists to create a new vehicular access into the SDA together with pedestrian and cycle connections at this point.
- **Old Witney Road (potential):** Pedestrian access already exists into the play area at the southern end of Old Witney Road. It may be possible to create an effective link into the SDA at this point depending on any future proposals for this part of the site. In addition, the permitted scheme for 77 dwellings at the former nursery and plant centre is intended to create a new access point at the northern end of Old Witney Road. The layout of the proposed scheme is such that it enables a subsequent connection into the wider SDA.

Figure 3.2 Potential connection points to Eynsham Village (source: West Eynsham SDA SPD Issues Paper Consultation, July 2018)



Source: 'West Eynsham Strategic Development Area: Supplementary Planning Document Issues Paper', July 2018.

A public consultation on the Issues Paper was undertaken in June/ July 2018. Key aspects that have been identified by respondents to the *West Eynsham SDA SPD Issues Paper* consultation include:

District-wide and beyond

As outlined in the issues paper, many respondents identify the A40 as a key consideration due to existing congestion, the additional vehicular traffic that will result from the provision of 1,000 new homes, and the proposed improvement schedule. The additional pressures put on roads as a result from developments in Witney and Long Hanborough must also be taken into account.

Several responses identify different ways that current and predicted congestion on the A40 can/should be improved, including:

- Turning the A40 into a dual carriageway;
- Re-routing the A40 to the north with all junctions via flyovers;
- Junction and road improvements around north and west Oxford; and
- Inter-regional transportation infrastructure improvements to facilitate traffic movement beyond Oxford.

Though A40 improvements have been identified, only some have been completed and have funding fully secured. Therefore, some respondents also argued that there is a need to pause the construction of new homes until funding is secured and/or improvements are not only in place, but also have demonstrated their adequacy for existing and future demand.

Additionally, several responses also identified the need to provide alternative transportation options and to reduce the number of private vehicles on the road rather than just managing their increasing numbers.

Suggestions for additional transportation network improvements included:

- Additional rail-based transport options, including light rail along the A40, with consideration given to the provision of new rail stations at Yarnton, Witney and Carterton;
- Seamless cycling connections along the A40 and connecting to the proposed Community Path to Botley (B4044);
- Relocation of the new Eynsham Park & Ride closer to Witney;
- Additional provision of walking and cycling infrastructure between Eynsham and the new Park & Ride;
- The addition of a dedicated return bus lane from Oxford or a reversible tidal central bus lane;
- Better access to Hanborough Station for cars, cyclists and pedestrians via Lower Road with additional parking capacity, station improvements and track alignment to accommodate additional service capacity;
- Attractive and improved bus services i.e. regular, affordable, efficient services to/from surrounding villages as well as key urban destinations;
- Improved bus infrastructure within Eynsham, including sheltered stops, real-time service information boards, and accessible kerbs for those with mobility aids; and
- Bridge improvements at Duke's Cut, the Cotswold Line railway, Oxford Canal and Swinford Toll Bridge to allow for bus priority lanes.

While it was noted that it may not be immediately possible to deliver rail-based transportation alternatives, comments also note the need to safeguard areas to deliver these links in the future. Others suggest that improvements should be pushed further and be more radical with costs amortised over a long period of time.

Broadly, there was also a recognised need to not only reduce car dependency, but to minimise the need to travel altogether. This was raised alongside concerns that additional homes will result in additional commuters and thus additional greenhouse gas that will negatively impact air quality and contribute towards climate change. Noise pollution and safety concerns as a result of increasing traffic in and around Eynsham were also raised.

Village access

Broadly, responses identified the need to control and manage access to Eynsham village, both from the A40 and between the West Eynsham SDA. Concerns that the village is used as a rat run to bypass busy roads especially during school run hours were frequently noted, with concerns that this will become a growing problem if not adequately addressed. Congestion within the village is made worse by this through-traffic as well as non-residents who park on side roads and use the village as an informal park and ride into Oxford. Thus, a number of respondents identified the need for:

- Infrastructure improvements within the village centre;
- Increased parking restrictions and traffic enforcement;
- Highly integrated and accessible cycling and pedestrian infrastructure to deter the use of private vehicles; and
- Improved bus services.

It was also stated by some that traffic from West Eynsham should not have direct access onto village roads. Instead, all motor traffic should be funnelled onto the A40 in both directions, leaving paths and bicycle tracks for entry into the village.

Western spine road

Comments regarding the western spine road generally aligned with the key issues and priorities set out in the Issues Paper. Comments added further detail by suggesting direct access onto the wider highway network, at the earliest opportunity thereby limiting traffic movements directed through the village. It is further suggested that the proposed spine road should be put in place before the houses are built.

3.4 Inter-relationships between the Eynsham development sites

There are a number of clear inter-relationships which will need to be taken into account as both sites are taken forward. These include transport and access arrangements, education and other supporting infrastructure. For example the size of any new primary school provided within the West Eynsham SDA could influence the number and size of any new primary schools provided within the Garden Village. Similarly, a new roundabout on the A40 to facilitate access into the West Eynsham SDA could also facilitate access into the Garden Village to the north. It is therefore essential that the two sites are not considered in isolation but are instead treated in a comprehensive manner to ensure the most effective outcomes.

4. Local Road Network

4.1 Overview of the A40

The A40 in the vicinity of the West Eynsham SDA and the Garden Village SLG is an important strategic corridor connecting the western Oxfordshire settlements of Eynsham, Witney and Burford to Oxford and beyond, joining the M40 to the east of Oxford. The A40 also provides connections to Gloucester, Cheltenham and the M5.

The section of the A40 abutting West Eynsham SDA and the Garden Village SLG is a single carriageway road and, on the section between Witney and Oxford, between 23,000 and 32,000 vehicles currently use it each day, which is above the road's capacity. Congestion causes daily problems for road users and has been described by business leaders as one of the biggest barriers to economic growth and prosperity in West Oxfordshire. All modes of transport are impacted by congestion, which encourages traffic to seek other routes.

This section provides an overview of traffic flows on the A40 and the surrounding area.

A40 East of Cassington Signals

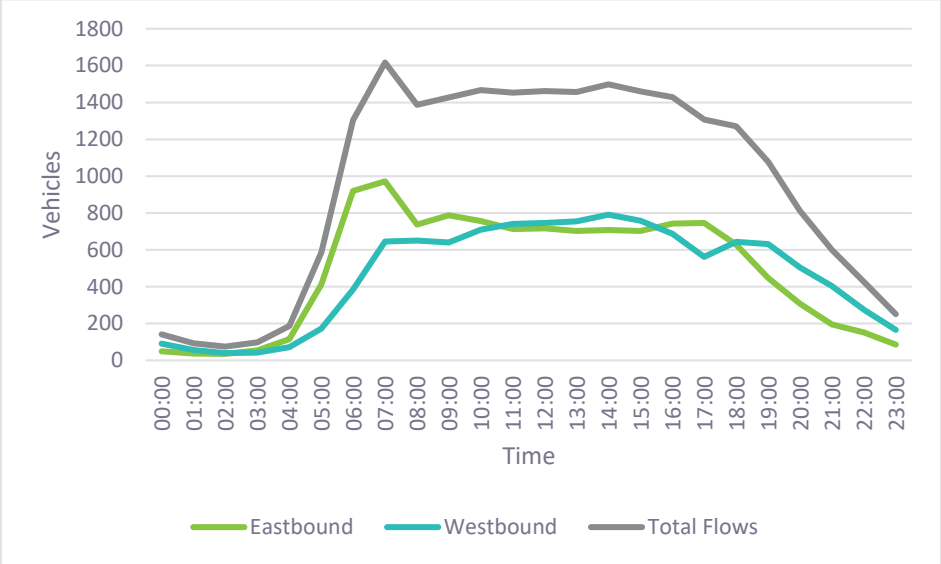
An analysis was undertaken of data taken from OCC's permanent Automatic Traffic Count (ATC) site located to the east of Cassington signals [ATC 168], the location of which is shown in **Figure 4.1** below.

Figure 4.1 Location of ATC 168: A40 East of Cassington Signals

Figure 4.2 illustrates the 5-day average (01/01/18 to 03/05/18) traffic flow data for ATC 168. It can be seen that:

- **A40 eastbound traffic:** The peak hour flow of around 1,000 vehicles, was between 07:00 and 08:00. Traffic flows were fairly consistent over the remainder of the day.
- **Westbound traffic**: The traffic flow throughout the day was fairly consistent, with a peak hour flow of around 800 vehicles from 14:00.
- **Total traffic:** Vehicle flows were consistently high throughout the day, with a total peak hour flow of over 1,600 vehicles between 07:00 and 08:00.

Figure 4.2 A40 east of Cassington Signals: Average hourly weekday traffic flows 2018



In-depth analysis for w/c Monday 5th March 2018

Figure 4.3 considers traffic flow on one week only (w/c Monday 5th March 2018), with the red shading representing the highest flows and green shading representing the lowest flows. This clearly shows a well-defined AM eastbound peak flow, whilst the westbound peak flow spans a longer time period.

Figure 4.3 A40 East of Cassington Signals: In-depth analysis (w/c Mon 5th March 2018)

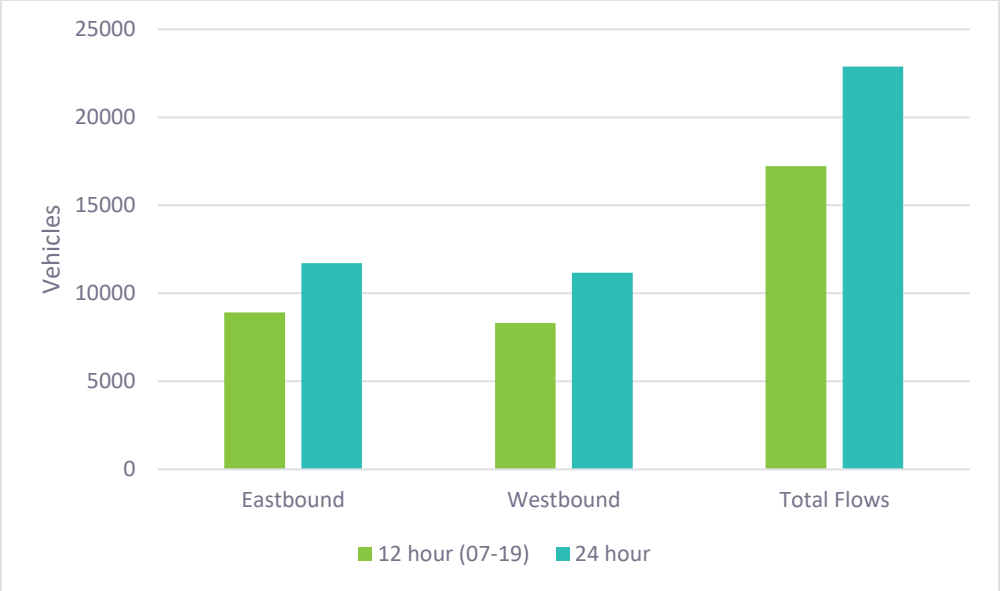
A40 EAST OF CASSINGTON

	0600-0700	0700-0800	0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300 - 1400	1400 - 1500	1500 - 1600	1600-1700	1700-1800	1800-1900	1900-2000	
Mon 5th March (westbound)	441	617	621	647	668	710	744	740	853	714	649	522	596	551	WESTBOUND
Tues 6th March (westbound)	417	624	671	631	709	721	744	716	816	818	661	458	662	676	
Weds 7th March (westbound)	403	680	704	647	735	747	787	746	835	732	731	507	580	714	
Thurs 8th March (westbound)	421	641	656	688	676	791	773	826	866	732	624	521	619	762	
Fri 9th March (westbound)	403	644	696	705	740	902	844	791	706	592	576	568	691	725	
Mon 5th March (eastbound)	973	1016	752	765	693	686	680	631	703	656	688	744	681	448	EASTBOUND
Tues 6th March (eastbound)	990	1046	724	800	744	754	725	742	744	726	810	779	676	446	
Weds 7th March (eastbound)	969	1098	730	786	758	704	727	746	825	796	834	778	677	450	
Thurs 8th March (eastbound)	941	1065	790	813	729	673	685	722	684	710	686	745	642	515	
Fri 9th March (eastbound)	907	1051	796	791	784	674	706	670	672	516	652	732	659	581	
Mon 5th March (total)	1414	1633	1373	1412	1361	1396	1424	1371	1556	1370	1337	1266	1277	999	TWO-WAY
Tues 6th March (total)	1407	1670	1395	1431	1453	1475	1469	1458	1560	1544	1471	1237	1338	1122	
Weds 7th March (total)	1372	1778	1434	1433	1493	1451	1514	1492	1660	1528	1565	1285	1257	1164	
Thurs 8th March (total)	1362	1706	1446	1501	1405	1464	1458	1548	1550	1442	1310	1266	1261	1277	
Fri 9th March (total)	1310	1695	1492	1496	1524	1576	1550	1461	1378	1108	1228	1300	1350	1306	

A comparison has also been made of the weekday average 12 hour and 24 hour two-way traffic flows (see **Figure 4.4**). It can be seen that:

- 75% of the traffic travels along the A40 (east of Cassington signals) between 07:00 and 19:00; with a 12 hour flow of 17,236 vehicles and a 24 hour flow of 22,886 vehicles.
- 52% of the 12 hour traffic at this point on the A40 is eastbound (8,912 vehicles) and 48% is westbound (11,723), with a similar ratio when the 24-hour period is considered.

Figure 4.4 A40 East of Cassington Signals: 12 hour and 24 hour two-way traffic flow analysis



Data has also been extracted to show the historic trend of traffic flow between 2015 and 2018 on the A40 east of Cassington signals (see Figure 4.5 for eastbound flows and Figure 4.6 for westbound flows). It can be seen from **Figure 4.5** that:

- AM peak hour eastbound flows fell between 2015 (925 vehicles) and 2016 (880 vehicles); this is likely to have been due to the junction improvement works that were taking place in North Oxford.
- Traffic levels were similar between 2017 and 2018, but higher than observed flows in 2015 and 2016.

Figure 4.5 A40 East of Cassington Signals: Average weekday **eastbound** traffic flows by time of day (2015 to 2018)

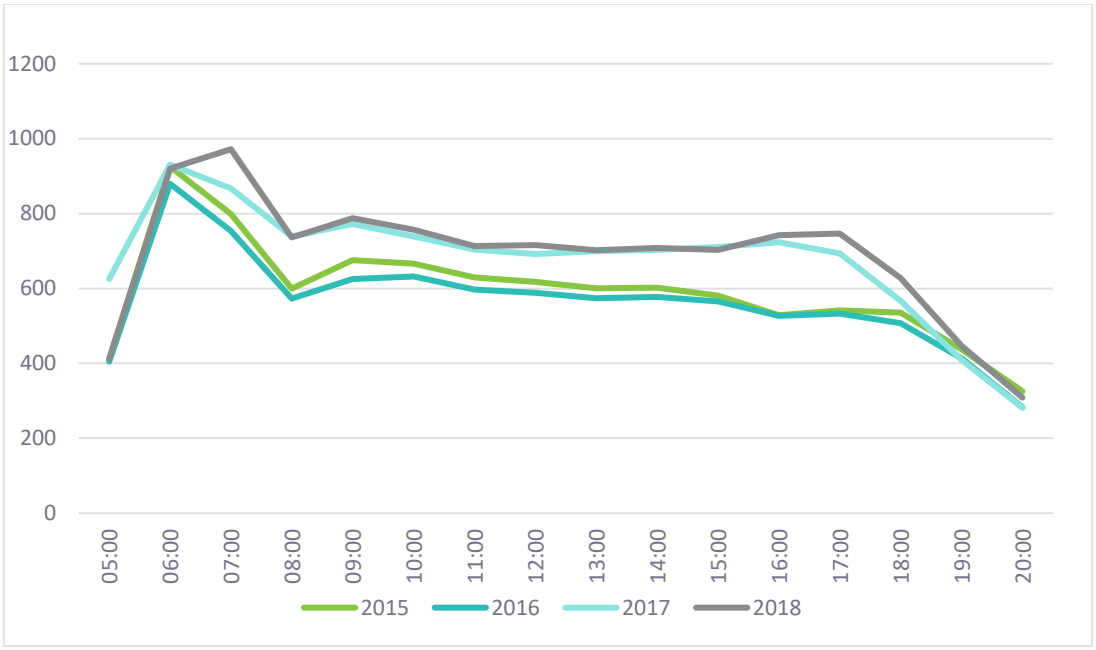
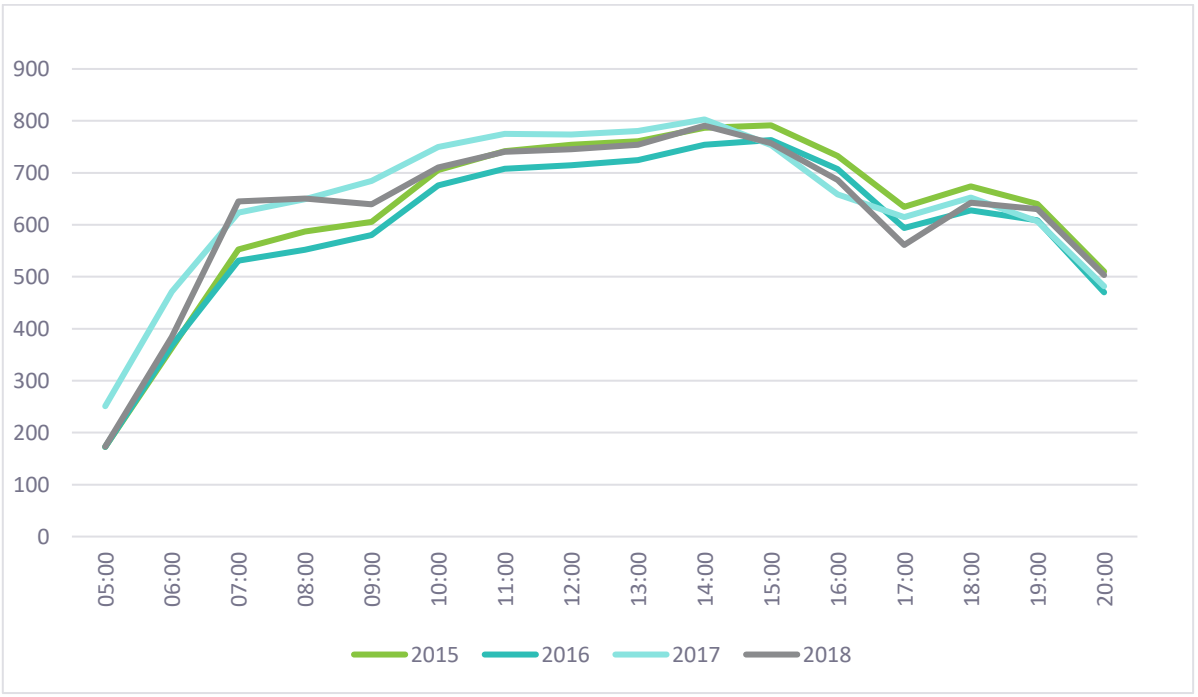


Figure 4.6 shows a very similar profile through the day for westbound flows, and relatively consistent flows across the day during all years.

Figure 4.6 A40 East of Cassington Signals: Average weekday **westbound** traffic flows by time of day (2015 to 2018)



A comparison was also undertaken of the weekday average 12 hour and 24 hour **two-way** traffic flows between 2015 and 2018, as illustrated in **Figure 4.7**. This shows that traffic levels dropped in 2016 from those in 2015, which is likely to be attributable to construction work at Cutteslowe and Wolvercote roundabouts, and that 12 hour and 24 hour traffic flows increased in 2017 to 17,131 and 23,198 respectively.

There was a slight increase in 12 hour flows to 17,236 in 2018, but a slight decrease in 24 hour flows to 22,886

Figure 4.7 A40 East of Cassington Signals: 12 hour and 24 hour two-way traffic flow analysis (2015 to 2018)

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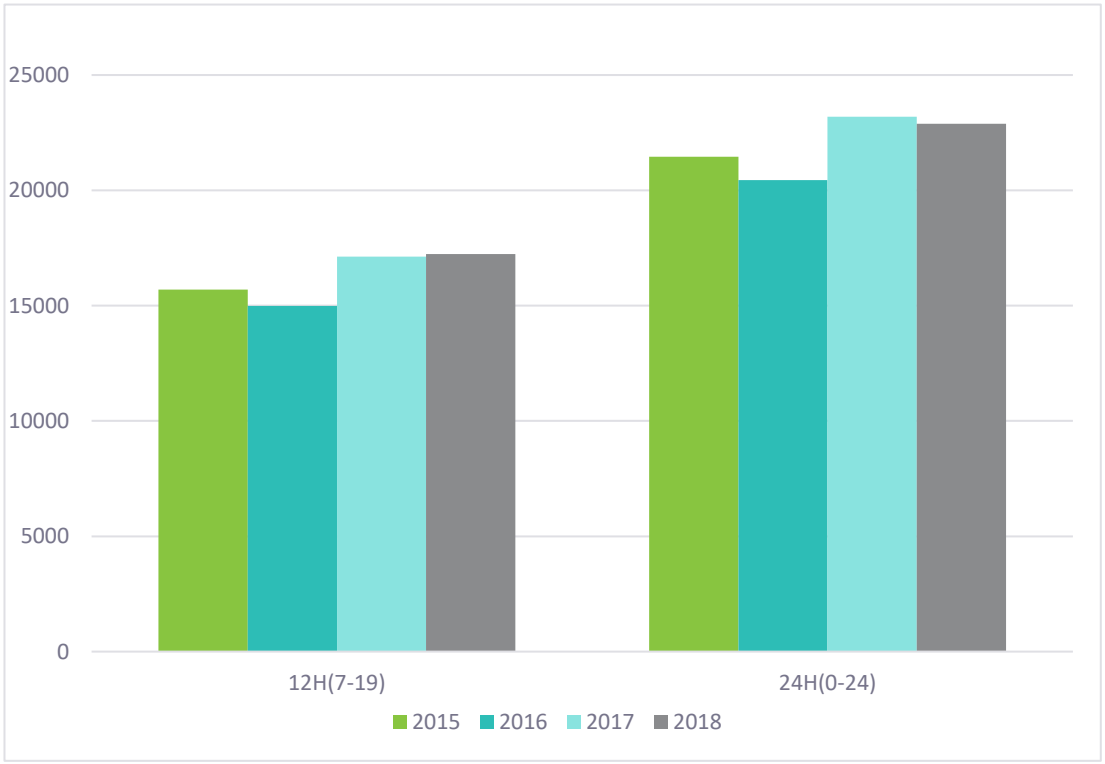


A40 Journey Times

Journey time surveys were undertaken on the A40 westbound during the AM peak (07:00–09:00) and PM peak (16:00–18:00) respectively. Journey times were recorded between 12 timing points (see Figure 4.8), between 19th to 22nd June 2018, and 25th to 28th June 2018.

Figure 4.8 A40 Journey Time Surveys – Timing Points

A baseline journey time was recorded of 5 minutes 27 seconds. A summary of the average journey times and speeds for the AM and PM peak is shown in Table 4.1 and also illustrated in **Figure 4.9**.

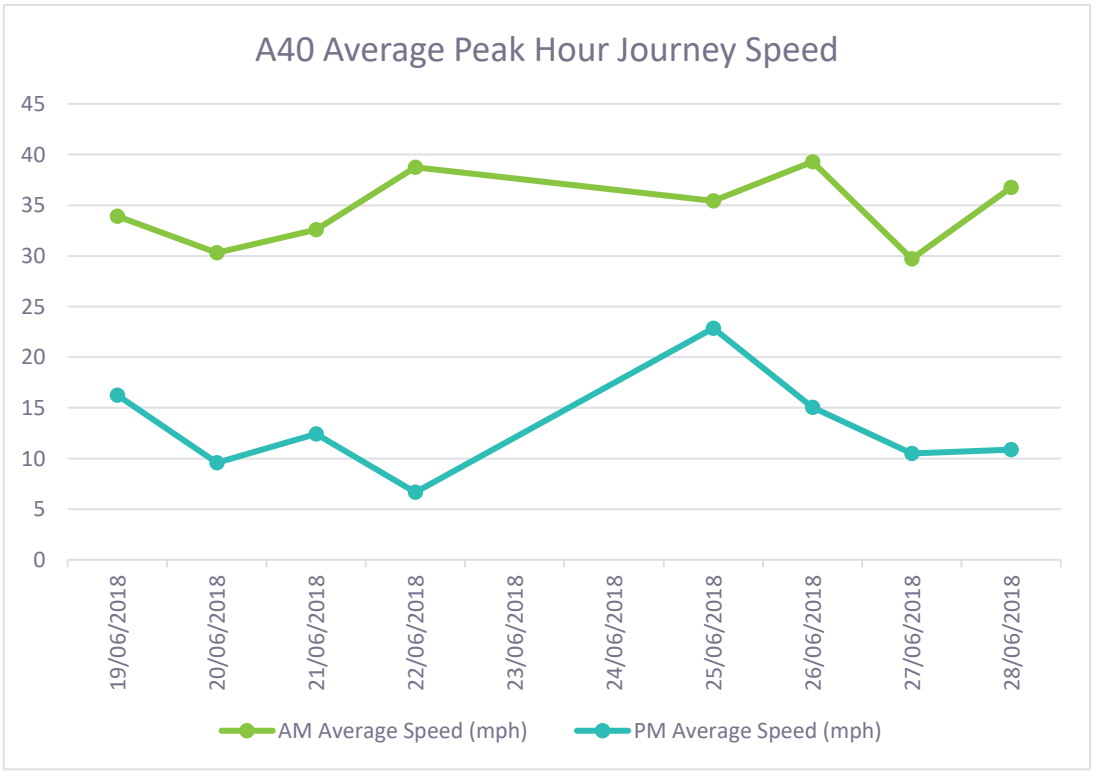
Table 4.1 Summary of Average A40 Westbound Journey Times and Speeds

AM Peak Averages			PM Peak Averages		
Date	**Average Time**	**Average Speed**	**Date**	**Average Time**	**Average Speed**
19/06/2018	07:34	33.92	19/06/2018	17:05	16.26
20/06/2018	08:32	30.31	20/06/2018	28:25	9.58
21/06/2018	07:36	32.57	21/06/2018	20:33	12.42
22/06/2018	06:23	38.76	22/06/2018	37:08	6.66
25/06/2018	07:02	35.44	25/06/2018	11:07	22.86
26/06/2018	06:18	39.29	26/06/2018	18:39	15.05
27/06/2018	08:51	29.71	27/06/2018	27:21	10.49
28/06/2018	06:45	36.75	28/06/2018	26:18	10.87

It can be seen that:

- The slowest average westbound journey time in the AM peak was 8 minutes 51 seconds, which was 3 minutes 24 seconds slower than the base journey time.
- The slowest average westbound journey time in the PM peak was 37 minutes and 8 seconds, which was 31 minutes 41 seconds slower than the base westbound journey time. These journey times are reflected in the journey speeds, with the average speed being significantly lower in the PM peak, as illustrated in **Figure 4.9.**

Figure 4.9 Summary of Average A40 Westbound Journey Speeds in Peak Periods



The study also identified the slowest journey times for each day, as shown in Table 4.2.

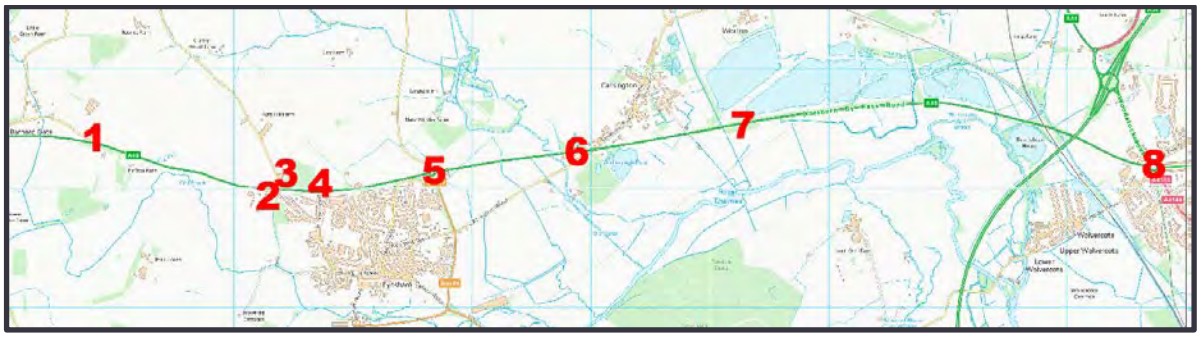
Table 4.2 Summary of Slowest A40 Westbound Journey Times and Speeds in Peak Periods

AM Peak			PM Peak		
Date	**Slowest Time**	**Slowest Speed**	**Date**	**Slowest Time**	**Slowest Speed**
19/06/2018	9.44	25.30	19/06/2018	24.54	9.90
20/06/2018	10.44	22.90	20/06/2018	35.44	6.90
21/06/2018	8.20	29.50	21/06/2018	25.54	9.50
22/06/2018	6.45	36.40	22/06/2018	39.40	6.20
25/06/2018	8.04	30.50	25/06/2018	14.06	17.40
26/06/2018	6.48	36.20	26/06/2018	28.22	8.70
27/06/2018	12.23	19.60	27/06/2018	38.42	6.40
28/06/2018	7.31	32.70	28/06/2018	37.12	6.60

4.2 A40 Junctions

Eight junctions along the A40 have been assessed as part of this baseline (see **Figure 4.10**).

Figure 4.10 A40 Junctions



A40/ Western access with Barnard Gate (Junction 1)

The A40 access with Barnard Gate is a skewed, priority T-junction on the northern side of the carriageway. The junction has a ghost right turn lane from the A40 westbound approach. At this junction, the shared cycle/footway routing along the northern side of the A40 routes on-road along the Barnard Gate service road. The junction is not lit.

In the AM peak hour (08:15 – 09:15), there were 10 vehicles turning left out of the junction onto the A40 eastbound and 5 vehicles turning right from the A40. In the PM peak hour there were 7 vehicles turning left out of the junction onto the A40 eastbound and 7 vehicles turning right from the A40.

A40/ Elm Place (Junction 2)

The A40/ Elm Place junction is a ghost island priority T-junction, which comprises two segregated parallel minor arms, one of which is a residential street known as Elm Place and the other is a private access serving

Eynsham Nursery Garden Centre. Each minor arm forms a junction with the A40 and both are situated on the southern side of the carriageway. The junction has a ghost right turn lane and is an all-movement junction. The junction is not street lit.

A40/ Cuckoo Lane (Junction 3)

A40/Cuckoo Lane is a priority T-junction on the northern side of the carriageway, with a right turn ghost island. Cuckoo Lane is a skewed minor arm at this junction and provides access to a number of villages located to the north of the A40. A shared pedestrian/ cycleway traverses the junction, with an informal crossing located to the north on the Cuckoo Lane which has dropped kerbs and tactile paving. The junction has no street lighting. The right turn from Cuckoo Lane to A40 westbound in particular, can be a difficult manoeuvre, especially at peak times. Directly opposite the junction is a bus stop layby with a sheltered waiting area, for westbound bus services to destinations including Witney, Carterton and Gloucester.

Figure 4.11 provides a summary of the traffic flows from a traffic count undertaken on 10 May 2018, where Arm A is Cuckoo Lane. In summary:

- In the AM peak, the maximum hourly junction flows occurred between 08:15 and 09:15, with:
  - 183 vehicles turning left out of Cuckoo Lane onto the A40 eastbound and 7 vehicles turning right onto the A40.
  - 92 vehicles turning right into Cuckoo Lane from the A40 and 21 vehicles turning left.
- In the PM peak, the maximum hourly junction flows occurred between 16:45 and 17:45, with:
  - 110 vehicles turning left out of Cuckoo Lane onto the A40 eastbound and 11 vehicles turning right.
  - 107 vehicles turning right into Cuckoo Lane from the A40 and 29 vehicles turning left.

Figure 4.11 A40/Cuckoo Lane: Traffic movements on Cuckoo Lane Arm (15 Minute Intervals)

A summary of the AM and PM peak hour turning counts for the A40/Cuckoo Lane junction is provided below:

FROM / TO	AM PEAK (08:15 TO 09:15)	Cuckoo Lane	A40 East	A40 West	TOTAL
FROM	Cuckoo Lane	0	183	7	**190**
FROM	A40 East	92	0	1,139	**1,231**
FROM	A40 West	21	1,145	0	**1,166**
FROM	TOTAL	**113**	**1,328**	**1,146**	**2,587**

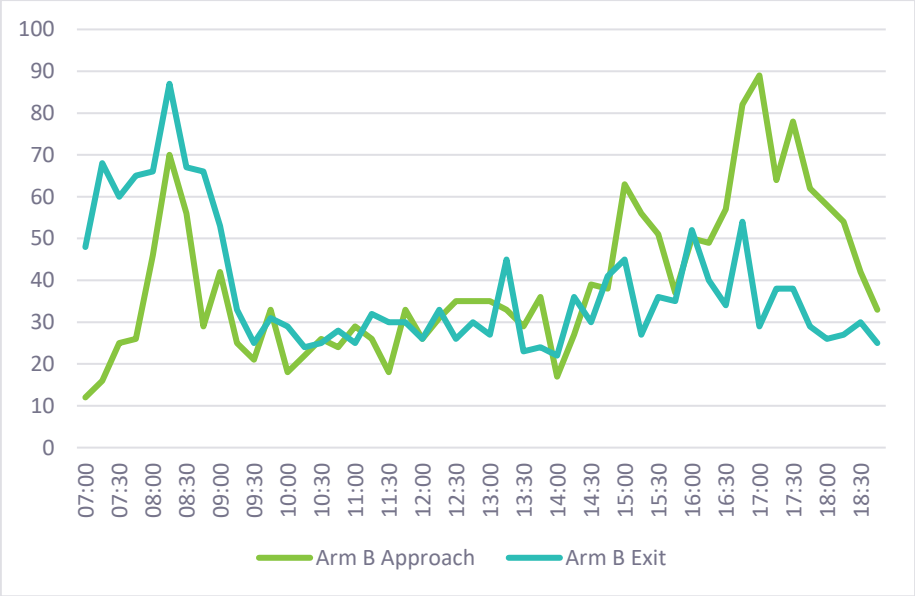
FROM / TO	PM PEAK (16:45 TO 17:45)	Cuckoo Lane	A40 East	A40 West	TOTAL
FROM	Cuckoo Lane	0	110	11	**121**
FROM	A40 East	107	0	1,269	**1,376**
FROM	A40 West	29	1,258	0	**1,287**
FROM	TOTAL	**136**	**1,368**	**1,280**	**2,784**

A40/ Witney Road (Junction 4)

A40/Witney Road is a signalised T-junction located on the southern side of the A40. The A40 eastbound flares to two lanes on the approach to the junction to provide dedicated ahead and dedicated right turn lanes. Vehicles are permitted to turn left only from Witney Road onto the A40 westbound but may not turn right towards Oxford. Vehicles are permitted to turn into Witney Road from the A40 in either direction. Witney Road provides access to the western areas of Eynsham, with onward connections towards western and southern Oxford via B4044. A staggered toucan crossing is located on the eastern side of the junction which has an independent set of traffic signals.

Figure 4.12 provides a summary of the traffic flows on the Witney Road arm on 10 May 2018, where Arm B is Witney Road. This shows the tidal flow with higher traffic movements from Witney Road in the morning peak period, and a higher flow turning into Witney Road in the evening peak period.

Figure 4.12 A40/ Witney Road: Witney Road Arm flows (15 Minute Intervals)



A summary of the AM and PM peak hour turning counts for the A40/ Witney Road junction is provided below:

		TO			
FROM	AM PEAK (08:15 TO 09:15)	A40 East	Witney Road	A40 West	TOTAL
	A40 East	0	26	1,033	**1,059**
	Witney Road	0	0	197	**197**
	A40 West	1,073	247	0	**1,320**
	TOTAL	**1,073**	**273**	**1,230**	**2,576**

		TO			
FROM	PM PEAK (16:45 TO 17:45)	A40 East	Witney Road	A40 West	TOTAL
	A40 East	0	6	1,067	**1,073**
	Witney Road	0	0	313	**313**
	A40 West	1,225	153	0	**1,378**
	TOTAL	**1,225**	**159**	**1,380**	**2,764**

A40/ Lower Road/ B4440: Eynsham Roundabout (Junction 5)

Eynsham roundabout is a four-arm roundabout with two circulatory lanes, with each approach arm flaring to two lanes on entry and with single lane exits. The B4449 provides access to the eastern areas of Eynsham, with onward connections towards western and southern Oxford via B4044. Lower Road provides access to villages to the north of the A40 and access via the A4095 to Hanborough Railway Station. There is a shared footway/cycleway provided on all sides of the junction, separated from the carriageway by grass verges with informal crossings present on the northern, southern and western arms. The northern and southern crossings have dropped kerbs, tactile paving and central refuges. The junction is lit on all arms. The lack of signalisation or priority for the shared path crossing, wide carriageways and high volumes of traffic results in poor provision for pedestrians and cyclists wishing to cross at this junction.

Figure 4.13 provides a summary of the traffic flows on the Lower Road (10 May 2018), where Arm A is Lower Road. This shows similar levels of traffic entering and exiting Lower Road throughout the day, except during the evening peak from 16:30 when there are higher numbers turning into Lower Road from the A40.

Figure 4.13 Eynsham Roundabout – Lower Road Arm (15 Minute Intervals)

Figure 4.14 provides a summary of the traffic flows on the B4449 arm, where Arm C is the B4449. This shows higher traffic numbers turning into the B4449 from the A40 during the morning peak hour.

Figure 4.14 Eynsham Roundabout – B4449 Arm – 15 Minute Intervals

A summary of the AM and PM peak hour turning counts for Eynsham Roundabout is provided below:

		TO				
FROM	AM PEAK (08:15 TO 09:15)	Lower Rd (N)	A40 East	B4449 (S)	A40 West	TOTAL
	Lower Rd (N)	0	44	174	114	**332**
	A40 East	25	5	192	658	**880**
	B4449 (S)	168	211	0	277	**656**
	A40 West	140	797	145	6	**1,088**
	TOTAL	**333**	**1,057**	**511**	**1,055**	**2,956**

		TO				
FROM	PM PEAK (16:45 TO 17:45)	Lower Rd (N)	A40 East	B4449 (S)	A40 West	TOTAL
	Lower Rd (N)	0	31	244	258	**533**
	A40 East	20	3	117	560	**700**
	B4449 (S)	201	186	0	265	**652**
	A40 West	93	798	343	4	**1,238**
	TOTAL	**314**	**1,018**	**704**	**1,087**	**3,123**

Eynsham Road/A40/Cassington Road Signalised junction: 'Cassington Signals' (Junction 6)

Cassington Signals is a signal-controlled right-left staggered crossroads, with the A40 acting as the major road and Cassington Road and Eynsham Road acting as the minor roads. In addition to the main junction arms, there is a private access road situated immediately east of the toucan crossing and a further signal-controlled arm situated opposite Eynsham Road.

The A40 widens to two lanes eastbound on the approach to the A40/Cassington T-junction to provide a dedicated ahead and dedicated right turn lane (towards Cassington Road). A priority controlled slip is provided to access Eynsham Road from the west, with a dedicated ahead lane and dedicated right turn lane at the eastbound internal stop line. Travelling westbound on the A40, there are dedicated ahead and right turn lanes on the approach to the A40/Eynsham Road T-junction, with a single lane continuing on the A40 westbound through the junction.

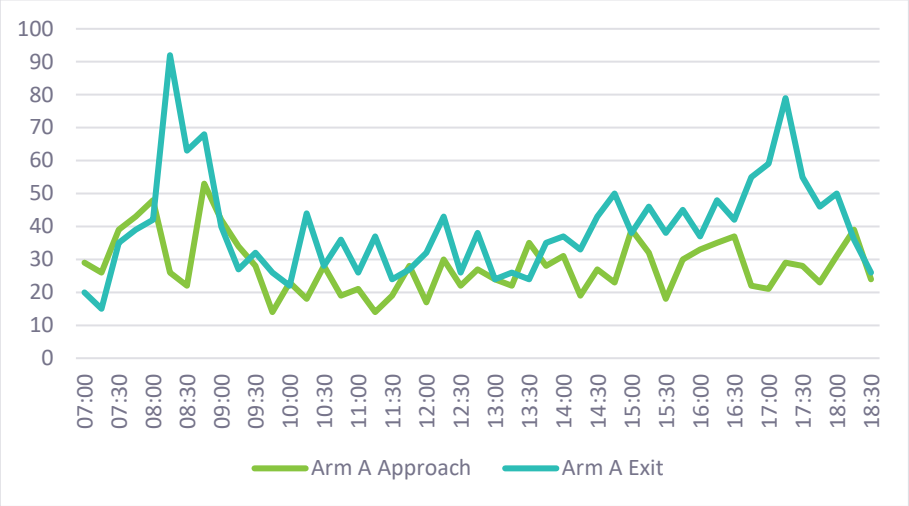
Shared pedestrian and cycle provision is located along both sides of the carriageway and is segregated from the carriageway by grassed verges. Informal footway/cycleway crossings with dropped kerbs are provided on both Eynsham Road to the north and Cassington Road to the south, the latter of which also benefits from tactile paving. A staggered toucan crossing is provided on the A40 in between the two minor junction arms

which work in tandem with the junction signalling. Street lighting is provided within the vicinity of the toucan crossing.

A bus stop and layby are located on the southern side of the A40, situated between Eynsham Road and Cassington Road.

Figure 4.15 provides a summary of the traffic flows on the Eynsham Road arm (10 May 2018) of the A40/Eynsham Road section of the stagger where Arm A is Eynsham Road. This shows higher traffic numbers turning out of Eynsham Road in both the morning and evening peak hours.

Figure 4.15 Eynsham Road/A40 Signalised Junction – Eynsham Road Arm – 15 Minute Intervals



A summary of the AM and PM peak hour turning counts for the Eynsham Road junction is provided below:

		TO			
FROM	AM PEAK (07:00 to 08:00)	Eynsham Rd (N)	A40 East	A40 West	TOTAL
	Eynsham Rd (N)	0	14	123	**137**
	A40 East	10	0	727	**737**
	A40 West	99	937	0	**1,036**
	TOTAL	**109**	**951**	**850**	**1,910**

		TO			
FROM	PM PEAK (16:45 to 17:45)	Eynsham Rd (N)	A40 East	A40 West	TOTAL
	Eynsham Rd (N)	0	6	94	**100**
	A40 East	17	0	606	**623**
	A40 West	231	807	0	**1,038**
	TOTAL	**248**	**813**	**700**	**1,761**

Agrivert Access/A40 (Junction 7)

The Agrivert junction is a staggered cross roads providing access to the Agrivert anaerobic digestion facility and former Cassington Quarry. Each arm has an entry slip in advance of the junction with approximate lengths of 80 metres eastbound and 70 metres westbound respectively. Both arms have informal pedestrian/cycle crossings with dropped kerbs. There is no street lighting in the vicinity of the junction.

Wolvercote Roundabout

Wolvercote Roundabout is a signalised six-arm roundabout with Five Mile Drive/A40/A4144/Godstow Road/A44. The roundabout is generally formed of 3 lanes with 2 exit lanes on the A40 and A44 arms. Shared footway/cycleways are provided on all arms of the roundabout of which the A40, A4144 and A44 arms include toucan crossings; Godstow Road includes an informal crossing with dropped kerbs, tactile paving and a central refuge; and Five Mile Drive includes an informal crossing with dropped kerbs. The junction is lit along all arms.

4.3 Overview of the B4449

The B4449 routes from the Lower Road/A40/B4449 roundabout along the eastern side of Eynsham providing a link to the B4044 at the B4449/B4044/Oxford Road roundabout before then routing to the south west. Within the study area the B4449 is single carriageway road with a 50mph speed limit. The existing carriageway has a typical width of 7.5m with some localised wider sections within the vicinity of junctions.

B4449 Traffic Flows (ATC 53)

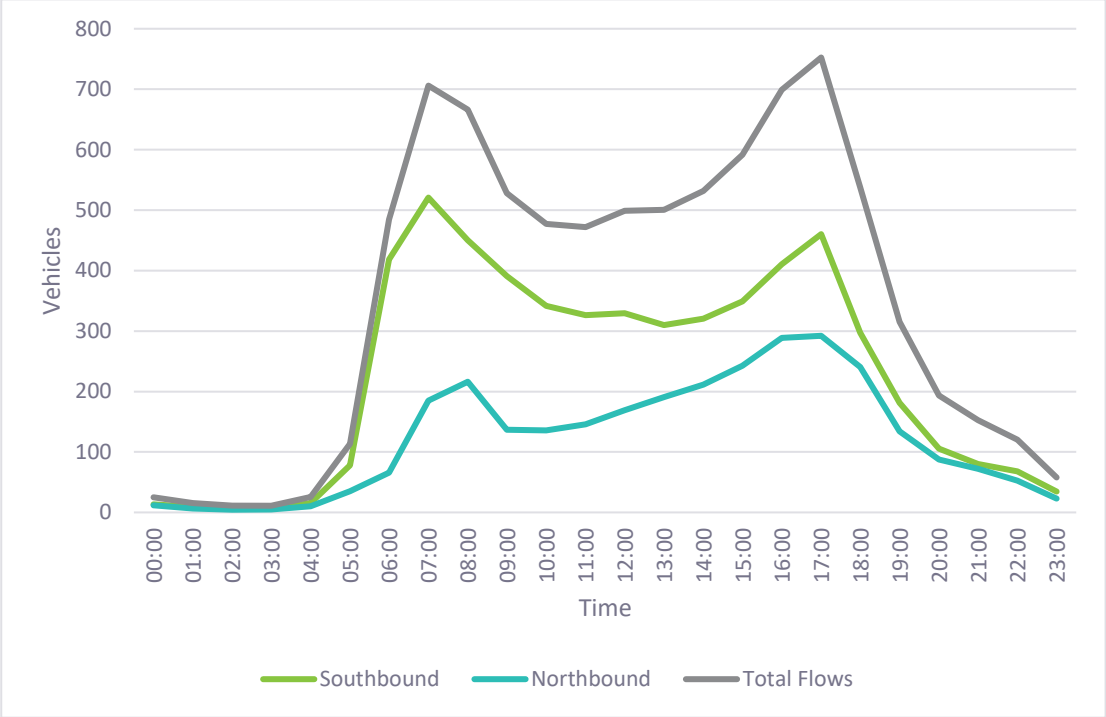
Traffic flow data was obtained from OCC's permanent ATC site Ref. 53, located on the B4449 north of Swinford Toll Bridge (see **Figure 4.16**).

Figure 4.16 Location of ATC 53: B4449 north of Swinford Toll Bridge

Traffic flows (southbound, towards Oxford and northbound, towards A40), for an average week day (5-day average) between 2015 and 2018 are shown in Figure 4.17. It can be seen that:

- **Southbound traffic**: This is the predominant flow, with the peak hour from 07:00 (over 500 vehicles), highlighting the southbound tidal flow towards Oxford in the morning. Traffic flows dip during the day, but rise again at 17:00 (460 vehicles).
- **Northbound traffic**: The morning peak hour is 08:00 to 09:00 (216 vehicles), but the main peak is between 16:00 and 18:00 with around 290 vehicles.
- **Total traffic:** There are distinct morning and evening peak flows with similar volumes of traffic of around 700 vehicles.

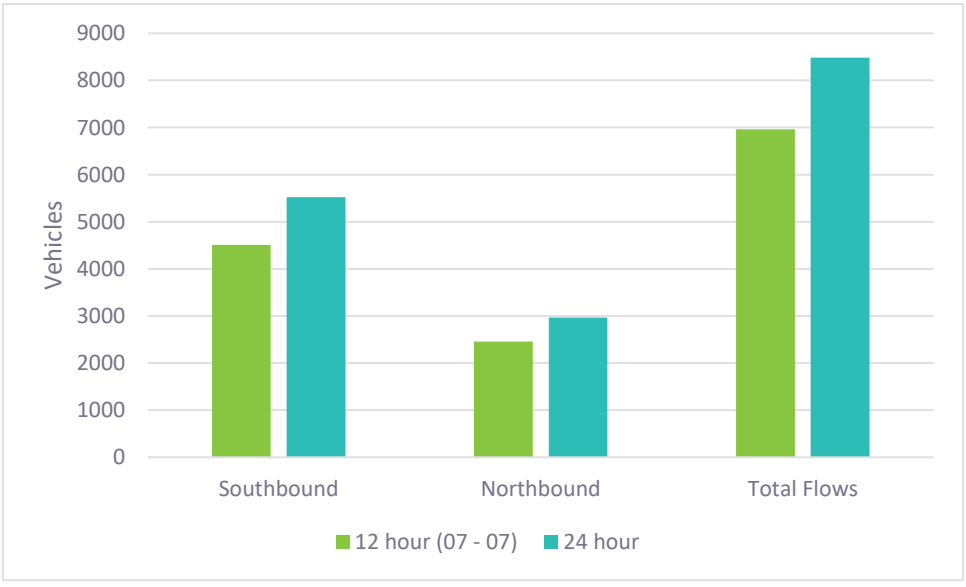
Figure 4.17 ATC 53 (B4449): Average hourly weekday traffic flows 2018



A comparison of the weekday average 12 hour and 24 hour two-way traffic flows for the five weekday period, (see **Figure 4.18**) shows that:

- 82% of the traffic is between the hours of 07:00 and 19:00 (6,961 vehicles as 12-hour flow, and 8,486 vehicles as 24-hour flow).
- 35% of the 12-hour traffic is northbound and 65% southbound.

Figure 4.18 ATC 53 (B4449): 12 hour and 24 hour two-way traffic flows



Southbound (towards Oxford) and northbound traffic flows for an average week day (5-day average) between 2015 and 2018 have been extracted from ATC 53. **Figure 4.19** illustrates the southbound traffic data and shows that there is a general trend for the peak hour being between 07:00 and 08:00, reaching 588 vehicles in 2016, with lower flows recorded in the other years

Figure 4.19 ATC 53 (B449): Average weekday **southbound** traffic flows by time of day

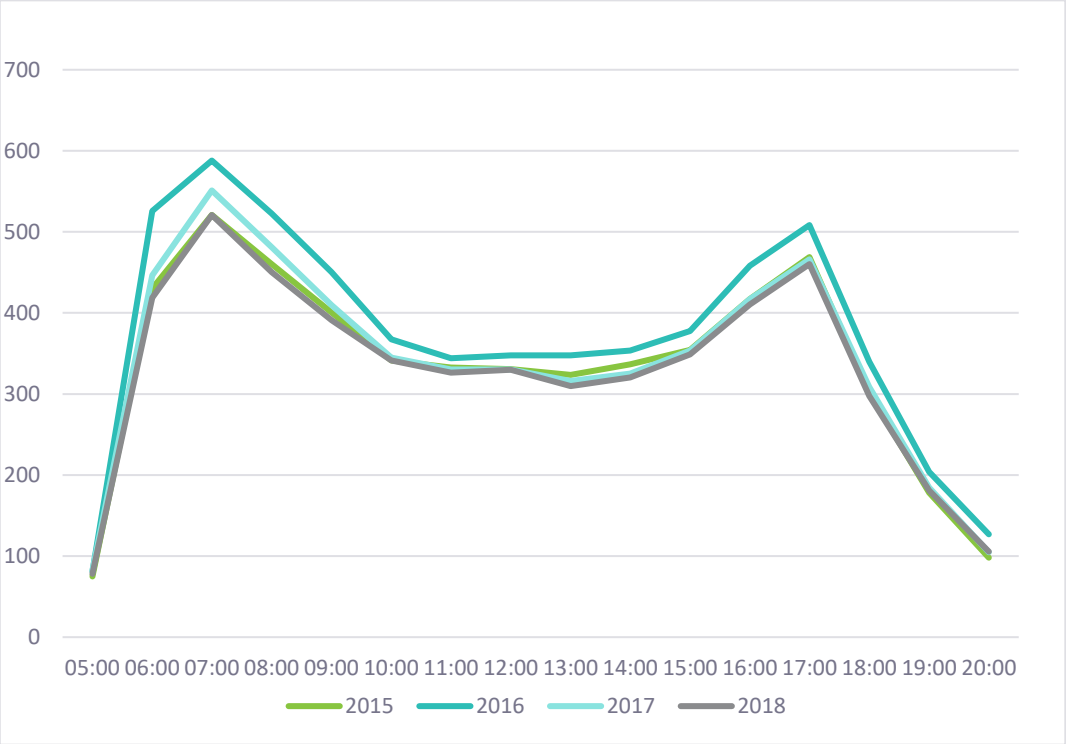
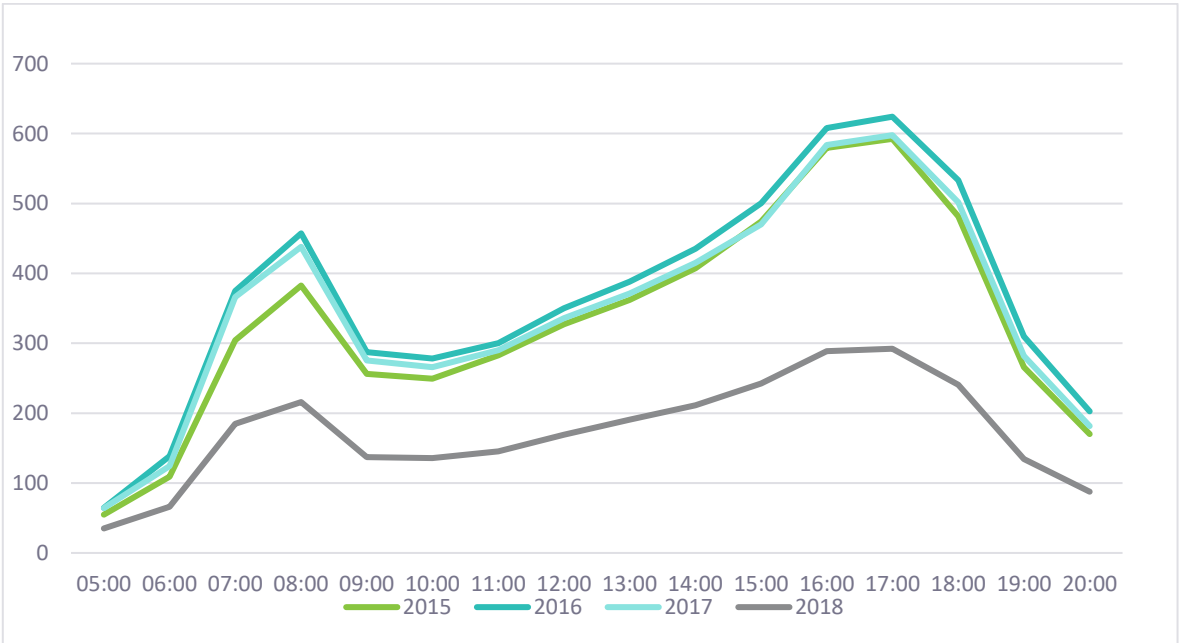


Figure 4.20 illustrates the traffic data for northbound vehicles in 2015 – 2017 and shows that the AM peak hour is later, between 08:00 and 09:00, with 457 vehicles in 2016, and lower numbers in other years.

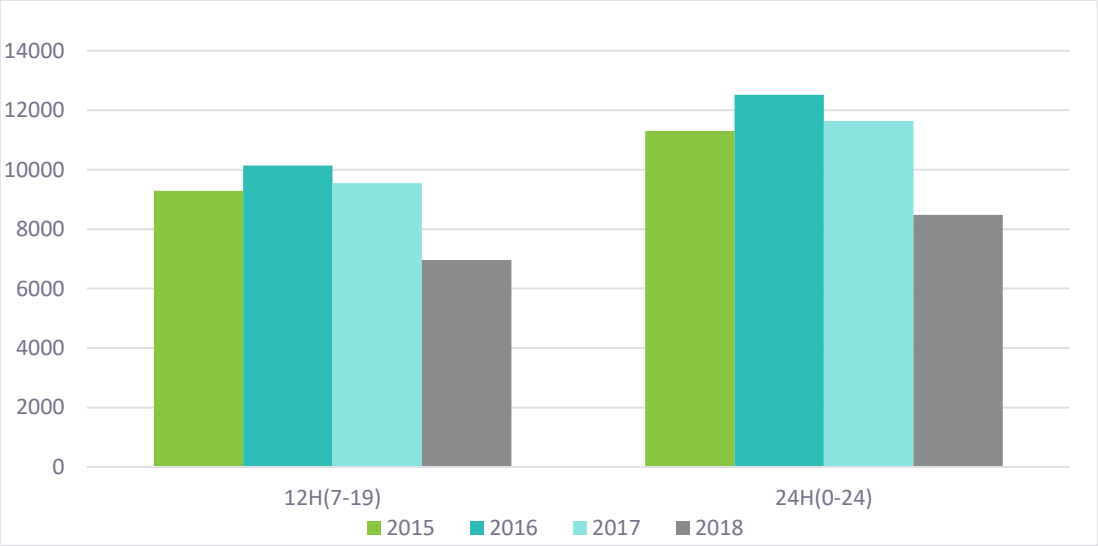
Figure 4.20 ATC 53 (B449): Average weekday **northbound** traffic flows by time of day



The two graphs illustrate tidal flows of southbound, towards Oxford in the morning peak, and northbound, away from Oxford in the evening peak. The results also indicate that traffic from Oxford diverted to the B4449 during the improvement works at Cutteslowe and Wolvercote roundabouts in 2016 and has since diverted back onto the A40.

A comparison has been made of the weekday average 12 hour and 24 hour **two-way** traffic flows for each of the years (see **Figure 4.21**). This shows that traffic levels were highest in 2016 in both the 12 hour and 24 hour profiles, at 10,142 and 12,525 respectively. Flows were slightly less in 2015 and 2017, and have significantly reduced in 2018, with 12 hour flows recorded as 6,961 vehicles and 24 hour flows as 8,486 vehicles.

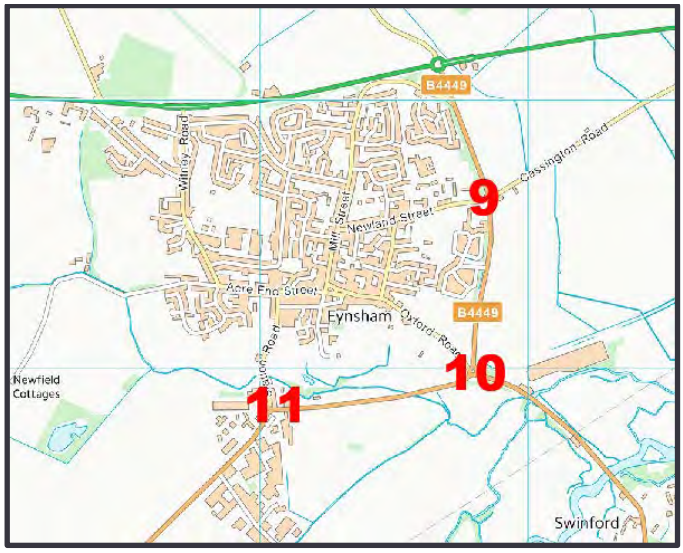
Figure 4.21 ATC 53 (B4449): 12 hour and 24 hour two-way traffic flows



B4449 Junctions

There are three main junctions situated along this section, as illustrated in **Figure 4.22**.

Figure 4.22 B4449 Junctions



B4449/Cassington Road Roundabout (Junction 9)

Junction 9 is a four-arm roundabout with the B4449/Cassington Road. Footways are provided on the northern sides of both Cassington Road arms and also along the western side of the southern B44449 arm, with two informal pedestrian crossings linking them all on the eastern Cassington Road arm and northern B4449 arms. Each crossing includes a central refuge, dropped kerbs and tactile paving. All arms provide single lane approaches and single lane exits. The junction is lit along all arms.

A summary of the AM and PM peak hour turning counts for the B4449/ Cassington Road Roundabout is provided below:

		TO				
	AM PEAK (08:30 to 09:30)	B4449 (N)	Cassington Rd (E)	B4449 (S)	Cassington Rd (W)	TOTAL
FROM	B4449 (N)	4	16	383	35	**438**
	Cassington Rd (E)	3	0	6	5	**14**
	B4449 (S)	353	3	1	19	**376**
	Cassington Rd (W)	35	16	10	0	**61**
	TOTAL	**395**	**35**	**400**	**59**	**889**

		TO				
	AM PEAK (16:15 to 17:15)	B4449 (N)	Cassington Rd (E)	B4449 (S)	Cassington Rd (W)	TOTAL
FROM	B4449 (N)	1	4	505	27	**537**
	Cassington Rd (E)	13	0	15	12	**40**
	B4449 (S)	552	7	0	23	**582**
	Cassington Rd (W)	24	2	20	1	**47**
	TOTAL	**590**	**13**	**540**	**63**	**1,206**

B4449/B4044/Oxford Road Roundabout (Junction 10)

Junction 10 is a four-arm roundabout with the B4449/B4044/Oxford Road. Footways are provided between the southern B4440 arm and the Oxford Road arm, the Oxford Road arm and the northern B4449 arm, and from the northern B4449 arm to Wharf Road, each separated from the carriageway by grass verges. Two informal pedestrian crossings are located on the Oxford Road arm and the northern B4449 arm, the latter of which includes a central refuge. All arms provide single lane approaches and single lane exits.

A summary of the AM and PM peak hour turning counts for the B4449/ B4044/ Oxford Road Roundabout is provided below:

		TO				
	AM PEAK (08:00 to 09:00)	B4449 (N)	B4044 Oxford Rd [E]	B4449 (SW)	Oxford Rd (NW)	TOTAL
FROM	B4449 (N)	0	198	81	2	**281**
	B4044 Oxford Rd [E]	304	3	105	48	**460**
	B4449 (SW)	104	199	0	4	**307**
	Oxford Rd (NW)	15	103	4	0	**122**
	TOTAL	**423**	**503**	**190**	**54**	**1,170**

	PM PEAK (16:30 to 17:30)	B4449 (N)	B4044 Oxford Rd [E]	B4449 (SW)	Oxford Rd (NW)	TOTAL
FROM	B4449 (N)	1	375	111	12	**499**
	B4044 Oxford Rd [E]	353	0	134	187	**674**
	B4449 (SW)	208	106	0	7	**321**
	Oxford Rd (NW)	16	51	4	0	**71**
	TOTAL	**578**	**532**	**249**	**206**	**1,565**

Station Road/B4449/Old Station Way (Junction 11)

Junction 11 is a four-arm roundabout with Station Road/B4449/Old Station Way, with all arms providing single lane approaches and single lane exits. Pedestrian footways are located along the western side of the southern B4449 arm and along both sides of all other arms. Informal pedestrian crossings are located on the

eastern B4449 arm and the Station Road arm, the latter of which includes a central refuge. The junction is street lit along all arms.

A summary of the AM and PM peak hour turning counts for the Station Road/B4449/Old Station Way Roundabout is provided below:

		TO				
	AM PEAK (07:15 to 08:15)	Station Rd (N)	B4449 [E]	B4449 Stanton Harcourt Rd (S)	Old Station Way (W)	TOTAL
FROM	Station Rd (N)	1	37	149	27	**214**
	B4449 [E]	9	0	140	21	**170**
	B4449 Stanton Harcourt Rd (S)	144	367	1	48	**560**
	Old Station Way (W)	0	1	2	0	**3**
	TOTAL	**154**	**405**	**292**	**96**	**947**

		TO				
	PM PEAK (17:00 to 18:00)	Station Rd (N)	B4449 [E]	B4449 Stanton Harcourt Rd (S)	Old Station Way (W)	TOTAL
FROM	Station Rd (N)	2	8	66	0	**76**
	B4449 [E]	24	0	217	2	**243**
	B4449 Stanton Harcourt Rd (S)	171	283	0	1	**455**
	Old Station Way (W)	25	40	13	0	**78**
	TOTAL	**222**	**331**	**296**	**3**	**852**

4.4 Overview of the A4095

Within the vicinity of the West Eynsham SDA and Garden Village SLG, the A4095 routes east to west from the junction with Wroslyn Road (west of the settlement of Long Hanborough) to the A4095/A44 roundabout. The A4095 forms a priority junction with the northen terminus of Lower Road to the east of Hanborough Business Park which currently provides the most direct route to the nearby Hanborough Rail Station from the Eynsham area. The A4095 is a single carriageway road that forms the 'high street' areas of Long Hanborough and Bladon and is rural in nature for the remaining sections. The road is typically 6.5m – 7m in width with localised narrowing within the Long Hanborough and Bladon areas.

From Wroslyn Road the A4095 has a 40mph speed limit which is reduced to 30mph upon entering Long Hanborough. The speed limit is then increased to 50mph at the eastern boundary of Long Hanborough located approximately 330 metres in advance of the junction with Lower Road, before returning to 30mph upon entering the settlement of Bladon. The speed limit then changes to national speed limit a short distance before the A4095/A44 roundabout.

The A4095 has a number of bus stops located along this section, particularly within the Long Hanborough and Bladon areas. Two signalised pedestrian crossings are located within Long Hanborough (close to Millwood End and close to Riley Close), one next to Hanborough rail station and one within Bladon (close to Park Lane). A shared cycle/footway routes along the northern side of the carriageway along the entirety of the this section. From this area the A4095 continues north-east providing a link to Bicester and south west to Witney.

A4095 traffic flows (ATC 23)

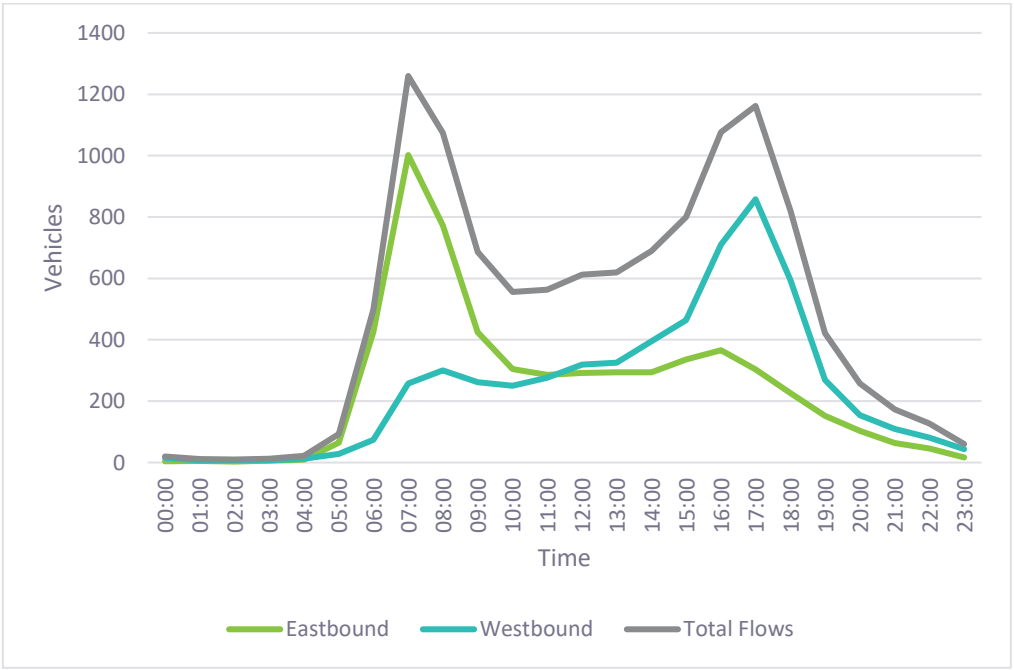
Traffic flow data was obtained from an ATC located on the A4095 (ATC 53) as shown in **Figure 4.23**.

Figure 4.23 Location of ATC 23: A4095

Eastbound (towards Bladon) and westbound (towards Long Hanborough) traffic flows from a 5-day period during May 2018 were extracted from the A4095 ATC 23 data. **Figure 4.24** illustrates the average hourly traffic data and shows the following:

- **Eastbound traffic**: There is a strong tidal correlation of traffic travelling east during the morning, with the peak AM hour being between 08:00 and 09:00. The vehicle numbers then sharply decrease after this period and remain relatively low for the remainder of the day with a small PM peak hour occurring between 17:00 and 18:00.
- **Westbound traffic**: The flows are a reverse of the eastbound traffic, showing a strong tidal flow during the PM peak. The vehicles numbers increase from around 06:00 reaching a small AM peak hour between 08:00 and 09:00. The number of vehicles then decrease slightly before increasing throughout the afternoon reaching a PM peak hour between 18:00 and 19:00. The number of vehicles then sharply decreases.
- **Total traffic:** There are distinct morning and evening peak flows with a total of 1,259 vehicles in the AM peak hour and 1,162 vehicles in the PM peak.

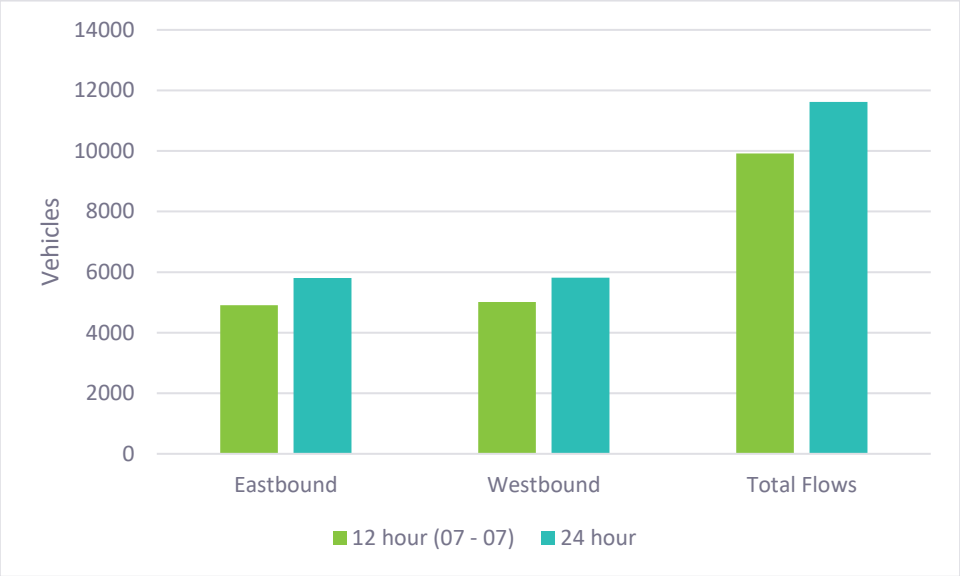
Figure 4.24 ATC 23 (A40950: Average hourly weekday traffic flows by time of day



A comparison has also been made of the weekday average 12 hour and 24 hour two-way traffic flows for the five day period, as illustrated in **Figure 4.25**. This shows that:

- 85% of the traffic is recorded between the hours of 07:00 and 19:00.
- 49% of the 12-hour traffic is travelling eastbound and 51% westbound. This is the same proportion for the 24-hour traffic observed.

Figure 4.25 ATC 23 (A4095): 12 hour and 24 hour two-way traffic flows



A4095 Junctions

There were four A4095 junctions where traffic counts were undertaken, as illustrated in **Figure 4.26**.

Figure 4.26 A4095 Junctions

A4095 Witney Road / Cuckoo Lane Priority Junction (Junction 12)

Junction 12 is a ghost island priority T-junction on the southern side of the carriageway of which the minor arm facilitates access to Cuckoo Lane. The junction has a ghost right turn lane from the western A4095 approach. Speed limit changes occur upon entering Cuckoo Lane from the A4095, from 50mph to national

speed limit designation. A pedestrian footway routes along the northen side of the A4095 but Cuckoo Lane has no pedestrian provision, being rural in nature and is bordered by grassed verges on both sides.

A summary of the AM and PM peak hour turning counts for the A4095 Witney Road/ Cuckoo Lane is provided below:

		TO			
FROM	AM PEAK (07:15 to 08:15)	A4095 Witney Rd (E)	Cuckoo Lane (S)	A4095 (W)	TOTAL
	A4095 Witney Rd (E)	0	29	330	**359**
	Cuckoo Lane (S)	47	0	58	**105**
	A4095 (W)	863	149	0	**1,012**
	TOTAL	**910**	**178**	**388**	**1,476**

		TO			
FROM	PM PEAK (16:45 to 17:45)	A4095 Witney Rd (E)	Cuckoo Lane (S)	A4095 (W)	TOTAL
	A4095 Witney Rd (E)	0	31	821	**852**
	Cuckoo Lane (S)	61	0	95	**156**
	A4095 (W)	415	54	0	**469**
	TOTAL	**476**	**85**	**916**	**1,477**

A4095 / Wroslyn Road Priority Junction (Junction 13)

Junction 13 is a ghost island priority T-junction on the southern side of the carriageway of which the minor arm facilitates access to Wroslyn Road. The junction has a ghost right turn lane from the western A4095 approach. Speed limit changes occur upon entering Wrosyln Road from the A4095 from 40mph to 30mph. Pedestrian footways are provided on all arms of the junction on both sides of the carriageways with an informal crossing with dropped kerbs and a central refuge located approximately 20 metres north of the junction.

Figure 4.27 provides a summary of the traffic flows on the Wroslyn Road arm taken from a traffic count undertaken on 10 May 2018. This shows similar traffic patterns throughout the day with a tidal flow of higher numbers entering the arm in the morning peak and exiting the arm in the evening peak. A second peak of traffic entering the arm also occurs between 15:00 and 16:00 which is considered to be associated with the school pick-up from Freeland C of E Primary School.

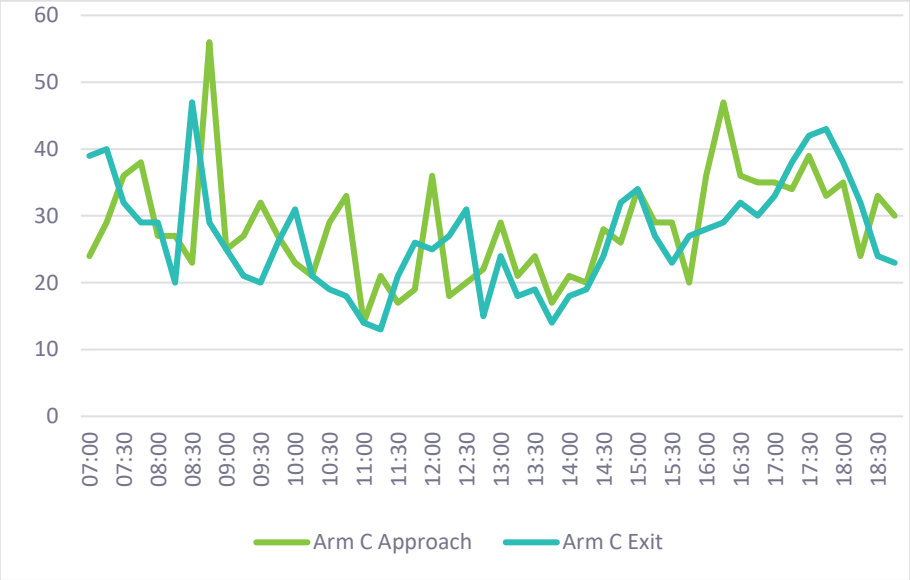
Figure 4.27 A4095/Wroslyn Road Priority Junction – Wroslyn Road Arm – 15 Minute Intervals

A4095 Main Road / Church Road Mini Roundabout (Junction 14)

Junction 14 is a four-arm mini roundabout with the A4095/Church Road and with the northern arm providing access to a Co-Operative Food store. All arms provide single lane approaches and single lane exits. Pedestrian footways with informal crossings are located on all arms of the roundabout of which both of the A4095 arms benefit from central refuges. Shared cycle/footways are located either side of the junction along the northern side of the A4095.

Figure 4.28 provides a summary of the traffic flows on the Church Road arm taken from the traffic count undertaken on 10 May 2018.

Figure 4.28 A4095 Main Road / Church Road Mini Roundabout – Church Road Arm – 15 Minute Intervals



A4095 Main Road / Cassington Road (Junction 15)

Junction 15 is a ghost island priority T-junction on the southern side of the carriageway of which the minor arm facilitates access to Cassington Road. The junction has a ghost right turn lane from the western A4095 approach. Speed limit changes occur upon entering Cassington Road from the A4095 from 50mph to national speed limit designation. A pedestrian footway routes along the northen side of the A4095 but Cassington Road has no pedestrian provision, being rural in nature and is bordered by grassed verges on both sides.

Figure 4.29 provides a summary of the traffic flows on the Cassington Road arm taken from a traffic count undertaken on 10 May 2018. Figure 4.41 shows traffic flows and a tidal flow of vehicles exiting the arm in the morning peak and entering the arm in the evening peak which generally show the opposite to the other junctions assessed on the A4095.

Figure 4.29 A4095 Main Road / Cassington Road Junction – Cassington Road Arm – 15 Minute Intervals

4.5 Overview of other routes

Lower Road

Lower Road routes from the A40 at Eynsham Roundabout northwards to the A4095 close to Hanborough Rail Station and Hanborough Business Park. The road is a single carriageway road with national speed limit designation and a typical width of 6.5m. Lower Road is typical of a rural road in that it has no kerbing and is largely fronted by grass verges, and it also has no road markings in places.

The consultation response to the AAP Issues Paper identified the need for the improvement of Lower Road, including safe pedestrian and cycling infrastructure.

Cuckoo Lane

Cuckoo Lane routes northwards from the A40 to the A4095 whilst also providing a link to the settlement of Freeland via Wroslyn Road. The road is a single carriageway road with national speed limit designation and a typical width of between 5 metres and 6 metres. Again, this is a typical rural road with no kerbing and grassed frontages and with no road markings in places.

Eynsham Road

Eynsham Road is a single carriageway road that routes between the A40 at Cassington Signals and The Green, providing the southern access to the village of Cassington. Eynsham Road is a single carriageway road with a 30mph speed limit and is largely fronted by residential dwellings. The road has a typical width of between 5.5 metres and 6 metres and includes a footway on the western side of the carriageway.

The Green/ Yarnton Road

The Green routes north from Eynsham Road, subsequently becoming Yarnton Road which continues eastwards towards the settlement of Yarnton. Within Cassington, The Green/Yarnton Road has a 30mph speed limit; this is increased to 40mph on Yarnton Road once clear of the village. The Green has a typical width of between 5m and 6.5m and Yarnton Road has a typical width of 5 metres. A footway is located on the western side of the carriageway on The Green and Yarnton Road continuing northwards from Eynsham Road as far as the northern extent of Cassington village.

B4044

The B4044 routes from the south east of Eynsham at the B4449/B4044/Oxford Road roundabout and then routes south west via the Swinford Toll Bridge, providing a link to the west of Oxford City centre and the A420 northbound. The road is a two-way single carriageway road, subject to a 50mph speed limit up until 100 metres from the Toll Bridge. There is a narrow footway along the northern side of the carriageway only, with no footway available on the southern side apart from a short section provided for the bus shelter.

The Swinford Toll Bridge is a privately owned toll bridge which crosses the River Thames just above Eynsham Lock. It is a major 'pinch point' on the B4044 due to its narrowness, with tolls collected manually from a toll booth at the northern end of the bridge. The bridge is governed by its own Act of Parliament. It allows the bridge owner to collect tolls.

Two bus stops are located on each side of the road adjacent to The Talbot Inn to the south of Wharf Road, and both have bus shelters.

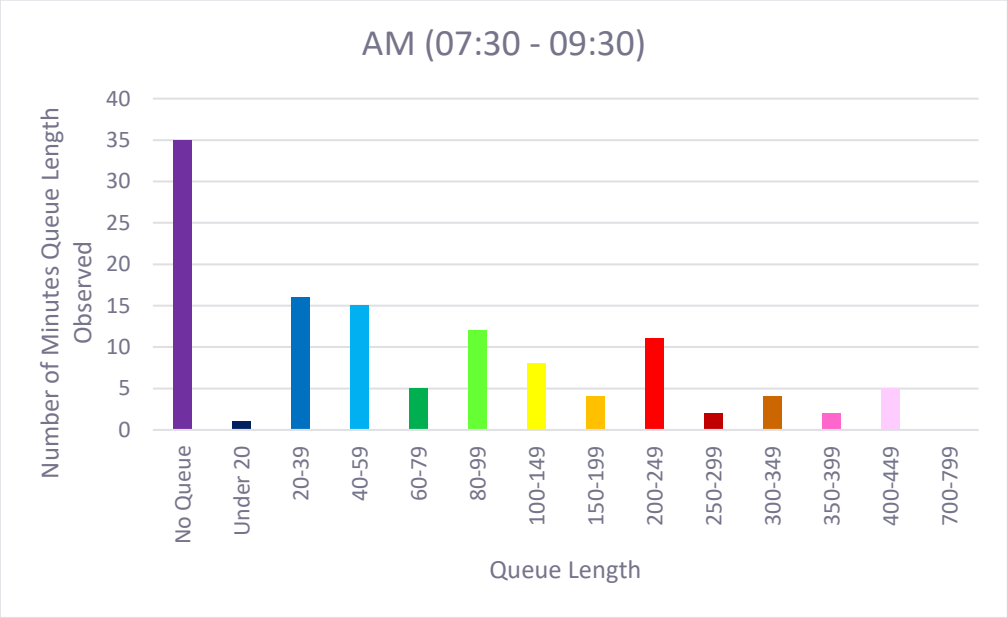
Swinford Toll Bridge

A study by Atkins observed queue lengths in advance of the Swinford Toll Bridge during the AM peak (07:30–09:30) and PM peak (16:30–18:30) on the 2nd April 2014. Queue lengths were recorded starting from the toll booth, both northbound and southbound along the B4044, the amount of time and length of queues being identified.

Northbound

During the AM peak there were no queues northbound for a significant amount of time (35 minutes). Queues of 20-39 metres were observed for 16 minutes; 40-59 metres for 15 minutes 80-99 metres for 12 minutes; and 200-249 metres for 11 minutes. The remaining queues were observed for less than 10 minutes, although these reached up to 400-449 metres for short periods. The number of minutes the queues were at various lengths are shown in **Figure 4.30**.

Figure 4.30 Northbound traffic queues on B4044 on approach to Swinford Toll Bridge – AM Peak

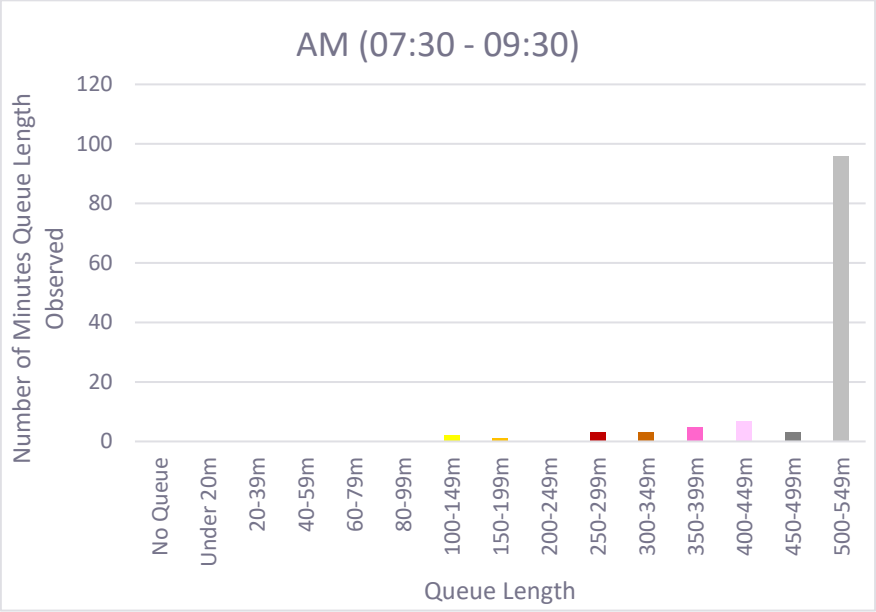


Queues during the PM peak were shown to be significantly worse with a tidal flow heading north during this period. During the PM peak queue lengths were observed between 700-799 metres for the entirety of the 2 hour period.

Southbound

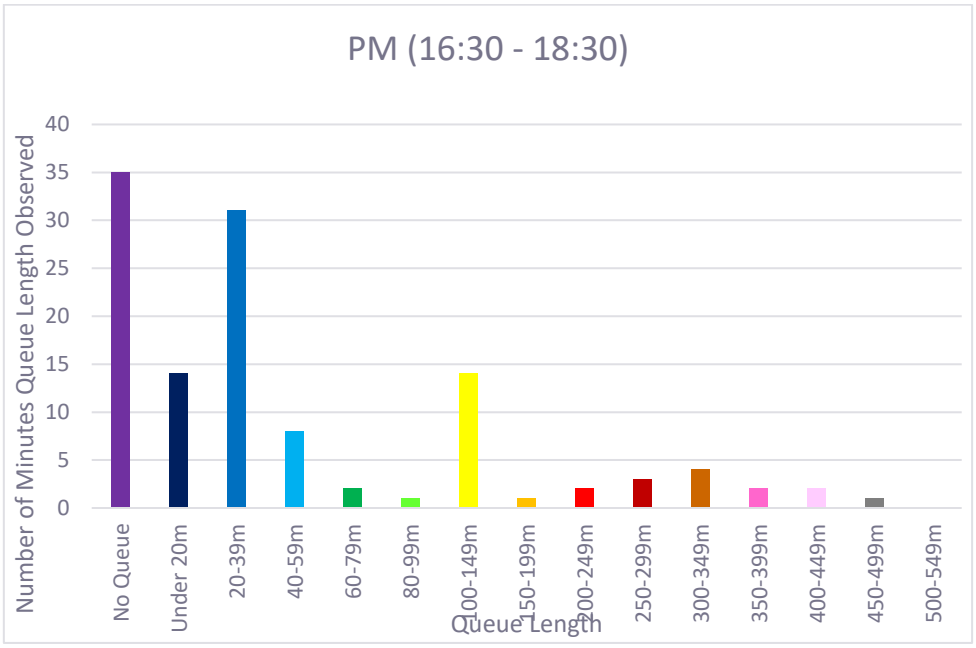
During the AM peak, queue lengths were observed between 500-549 metres for almost the entirety of the 2 hour peak period, reaching the priority junction with Wharf Road. Contrary to the northbound traffic, southbound queues during the AM peak were shown to be significantly worse. This shows a tidal flow heading south during this period. The number of minutes the queues were at various lengths are shown in **Figure 4.31**.

Figure 4.31 Southbound traffic queues on B4044 on approach to Swinford Toll Bridge – AM Peak



During the PM peak no queues were observed for approximately 35 minutes; queues of under 20 metres for 14 mins; 20-39 metres for 31 minutes; 40-59 metres for 8 minutes; and 100-149 metres for 14 minutes. The number of minutes the queues were at various lengths are shown in **Figure 4.32**.

Figure 4.32 Southbound traffic queues on B4044 on approach to Swinford Toll Bridge – PM Peak



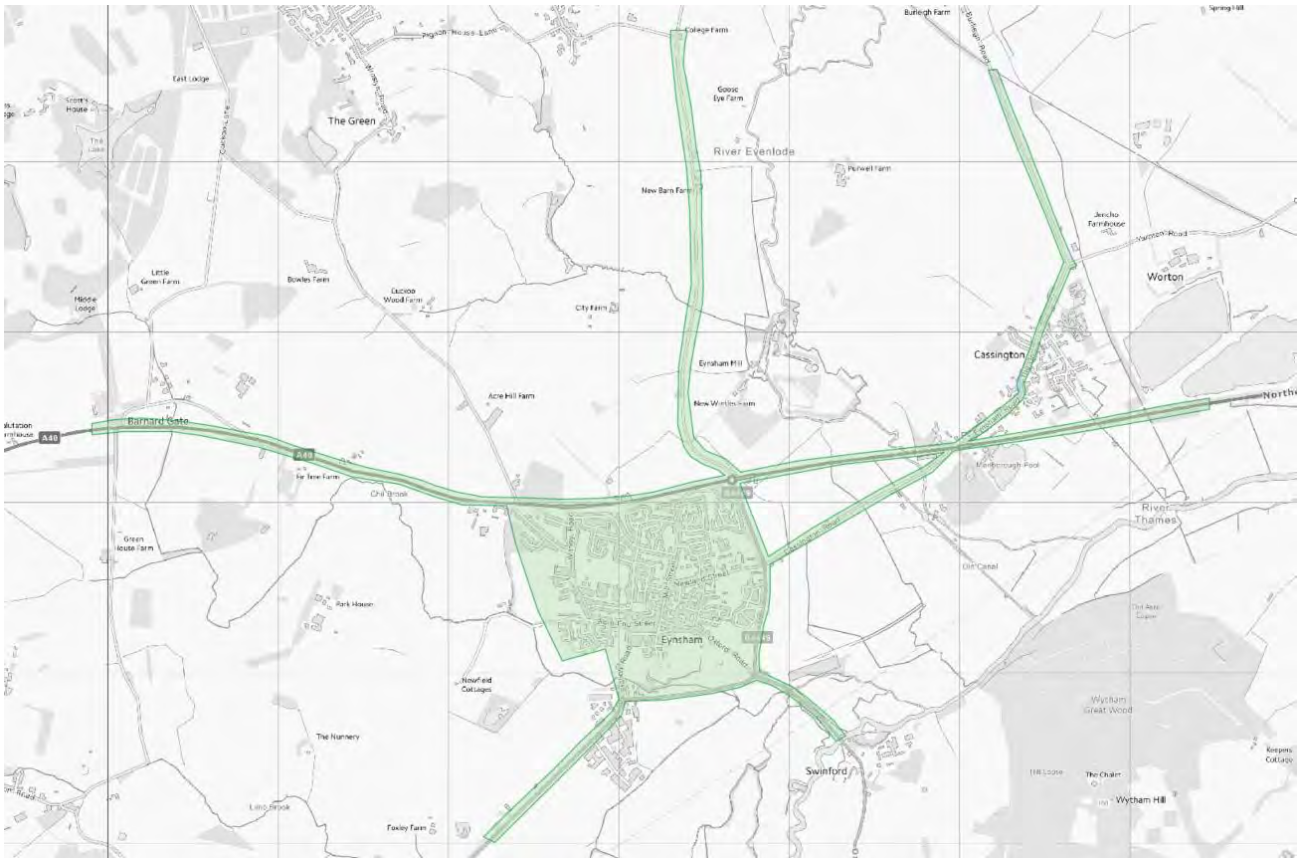
The toll bridge currently presents a bottleneck with delays in both directions during the peak periods. These are significantly worse during the PM peak northbound and the AM peak southbound.

4.6 Personal injury accident data

Overview

Recorded Personal Injury Accidents (PIAs) were obtained from OCC for a five-year period from 01/07/2013 to 01/07/2018 in the vicinity of the West Eynsham SDA and Garden Village SLG sites, covering the main routes in the area which include the A40, B4449, B4044 and Lower Road, in addition to the Eynsham Village area and the main through route of Cassington. The full study area is shown in **Figure 4.33**.

Figure 4.33 Personal Injury Accident Study Area



The data indicates that 104 accidents occurred within the study area. Table 4.3 summarises the number of accidents by severity for each of the years.

Table 4.3 Summary of Recorded Personal Injury Accidents (2013-2018)

Year	Severity of Injury			Vulnerable Road user		
	Slight	Serious	Fatal	Motorcyclist	Pedal Cyclist	Pedestrian
2013	16	6	0	4	5	0
2014	16	5	0	3	3	0
2015	14	5	1	6	3	1
2016	8	6	0	4	4	0
2017	14	5	0	4	2	2
2018	7	1	0	2	1	0
Total	**75**	**28**	**1**	23	18	3

Table 4.4 sets out the links that have been included within the scope of the analysis which comprised a review of the severity and the causation factors of accidents that took place within the study area; these are also indicated in **Figure 4.34**.

Table 4.4 Personal Injury Accident Road Sections

Link	Road (Link)	From	To
A	Lower Road	Lower Rd/ Church Road junction	Eynsham Roundabout (B4449/A40/Lower Rd)
B	Burleigh Road	Rail bridge	Burleigh Road/ Yarnton Rd junction
C	The Green	Burleigh Road/ Yarnton Rd junction/ The Green junction	The Green/ Eynsham Rd/ Church Lane junction
D	Eynsham Road	The Green/ Eynsham Rd/ Church Lane junction	A40/ Eynsham Road junction
E1	A40	A40 junction with western entrance to Barnard Gate Access Road	A40 junction with eastern access to Barnard Gate
E2	A40	A40 junction with eastern access to Barnard Gate junction	A40 junction with Elms Place
E4	A40	A40 junction with Witney Road	Eynsham Roundabout
E5	A40	Eynsham Roundabout	A40 junction with Cassington Road
E6	A40	A40 junction with Cassington Road	A40 junction with Agrivert access
F	Cassington Road	Cassington Road junction with A40	Cassington Road/ B4449 roundabout
G1	B4449	Eynsham Roundabout (B4449/A40/Lower Rd)	Cassington Road/ B4449 roundabout
G2	B4449	Cassington Road/ B4449 roundabout	B4449/B4044/Oxford Road roundabout
G3	B4449	B4449/B4044/Oxford Road Roundabout	Station Road/B4449/Old Station Way roundabout
G4	B4449	Station Road/B4449/Old Station Way roundabout	B4449 junction with Foxley Farm access road
H	B4044	B4449/B4044/Oxford Road roundabout	Swinford Toll Bridge

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Key

Links

Junctions

A	Lower Road
B	Burleigh Road
C	The Green / Yarnton Road
D	Eynsham Road
E1	A40 Link 1
E2	A40 Link 2
E4	A40 Link 4
E5	A40 Link 5
E6	A40 Link 6
F	Cassington Road
G1	B4449 Link 1
G2	B449 Link 2
G3	B4449 Link 3
G4	B4449 Link 4
H	B4044

0 km 1.5 km

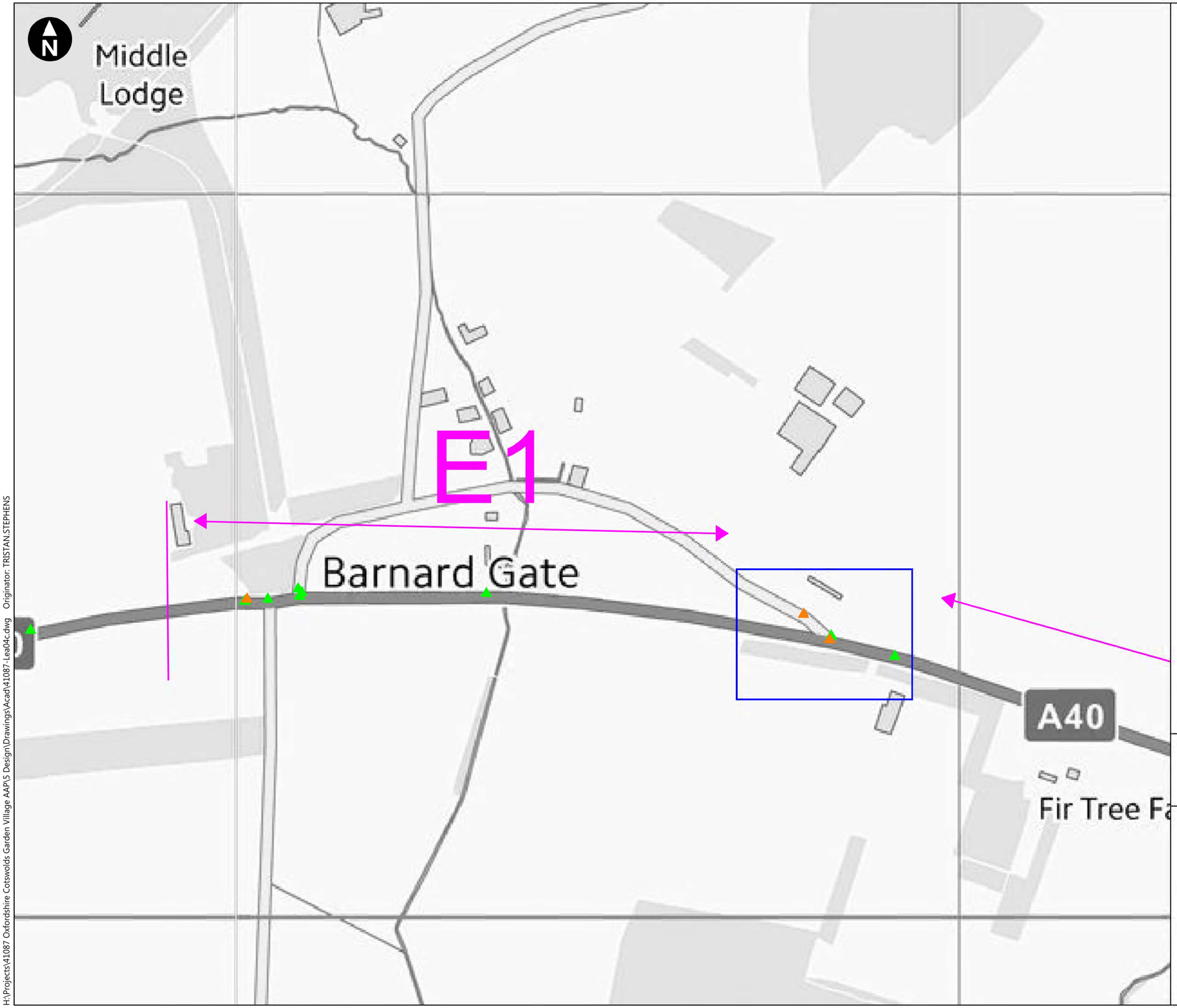
Scale 1:25,000 @ A3

Oxfordshire Cotswolds Garden Village AAP

Figure 4.34
Personal Injury Accident Data
Key Sheet
01 July 2013 to 01 July 2018

May 2018

wood.



Key

- Links
- Junctions
- Slight Accident
- Serious Accident
- Fatal Accident

0 m 300 m

Scale 1:5000 @ A3

Client

Oxfordshire Cotswolds Garden Village AAP

Figure 4.34
Personal Injury Accident Data
Sheet 1
01 July 2013 to 01 July 2018

May 2018

wood.

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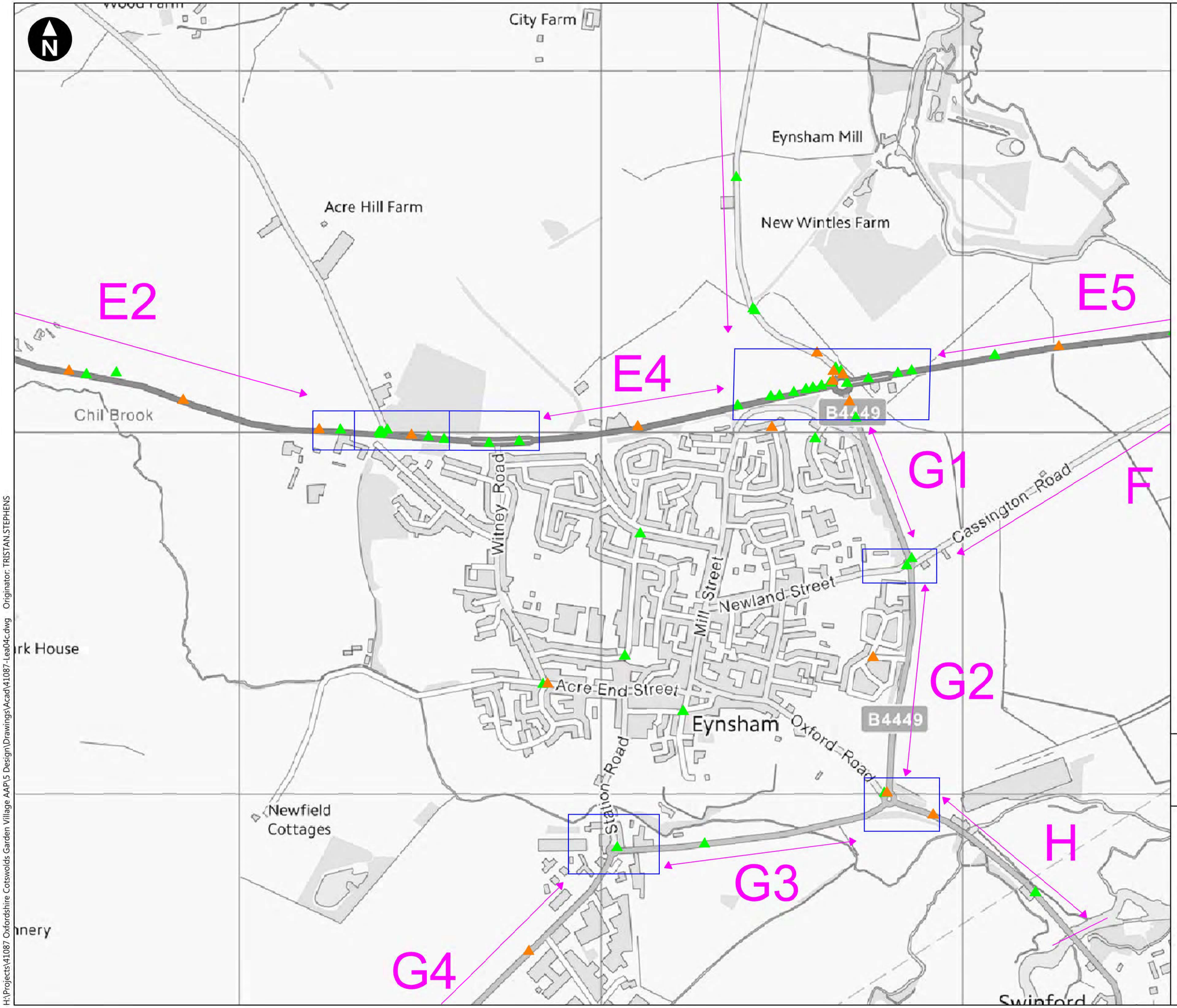

Client

Oxfordshire Cotswolds Garden Village AAP

Figure 4.34
Personal Injury Accident Data
Sheet 2
01 July 2013 to 01 July 2018

May 2018

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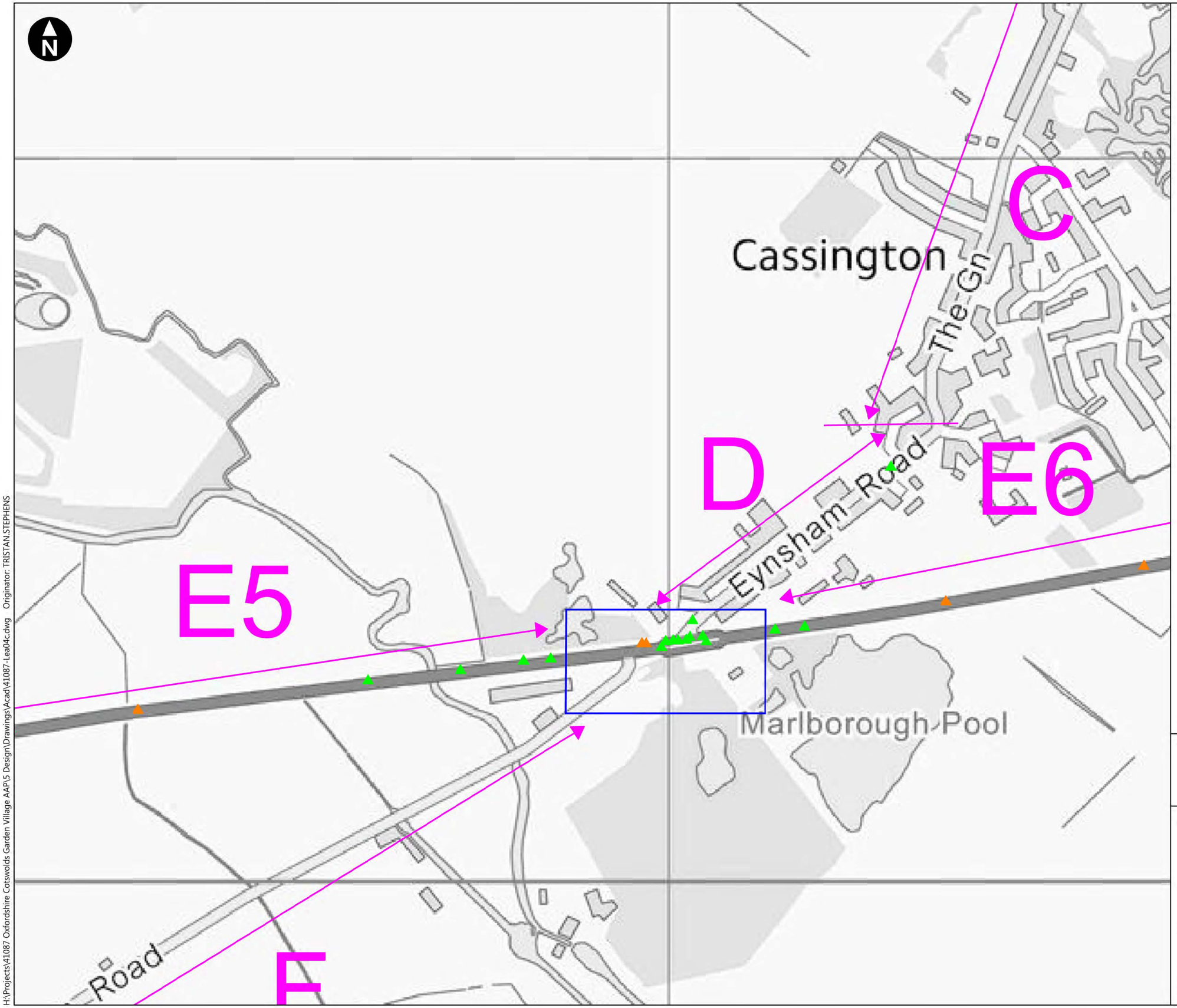

Key

- Links
- Junctions
- Slight Accident
- Serious Accident
- Fatal Accident

0 m 300 m

Scale 1:5000 @ A3

Client

Oxfordshire Cotswolds Garden Village AAP

Figure 4.34
Personal Injury Accident Data
Sheet 3
01 July 2013 to 01 July 2018

May 2018

wood.

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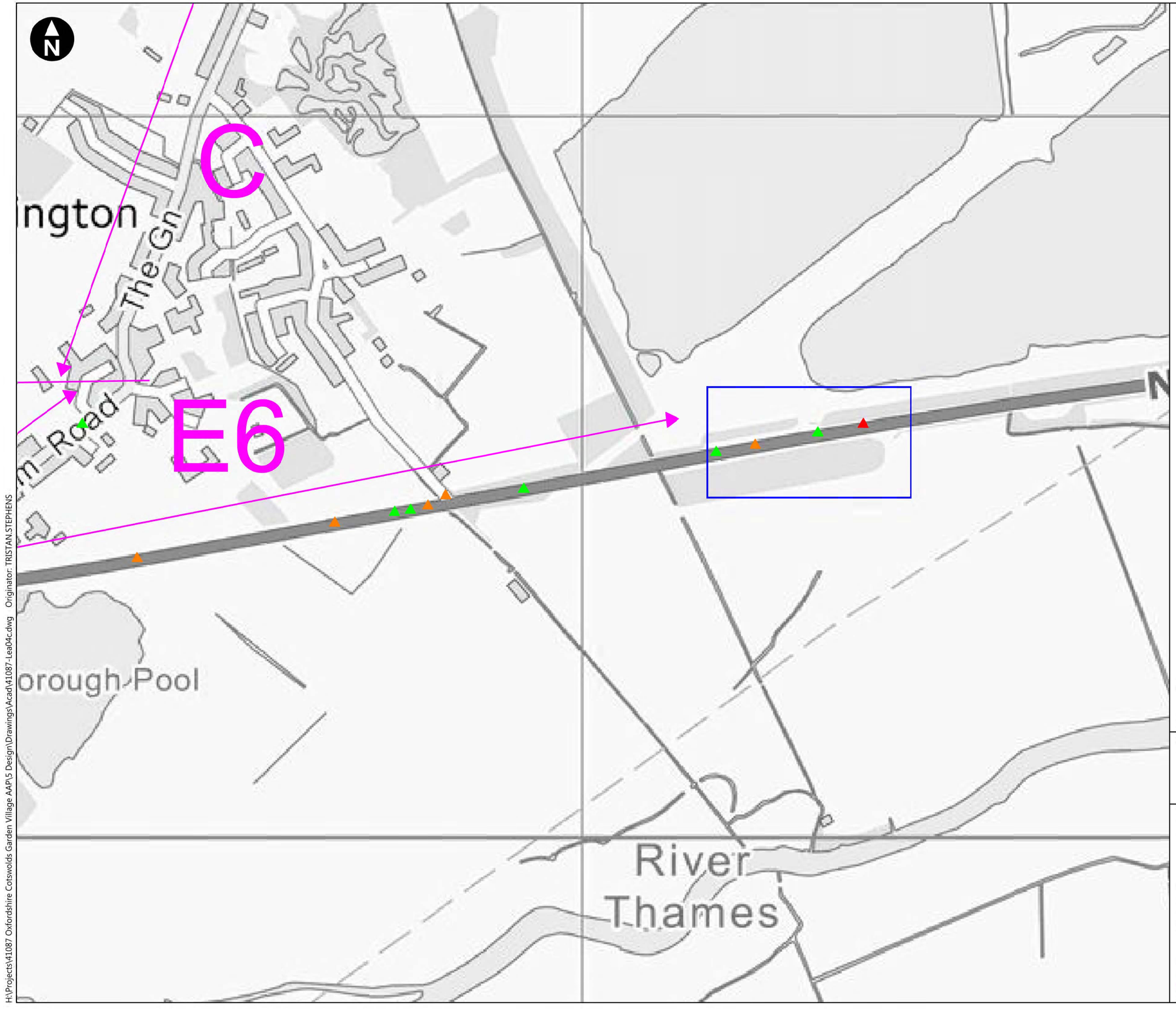

Key

- Links
- Junctions
- Slight Accident
- Serious Accident
- Fatal Accident

0 m 300 m

Scale 1:5000 @ A3

Client

Oxfordshire Cotswolds Garden Village AAP

Figure 4.34
Personal Injury Accident Data
Sheet 4
01 July 2013 to 01 July 2018

May 2018

wood.

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The number of PIAs recorded on the local roads within the central Eynsham Village area were low (less than one per annum per road/junction), and did not include a fatality. These have been summarised under a general heading of 'Eynsham Village' later in this section.

Junctions within the study area for which PIAs were recorded and which are therefore reported within this section are as follows:

- A40 junction with eastern access to Barnard Gate (priority junction)
- A40/ Elms Place (priority junction)
- A40/ Cuckoo Lane (priority junction)
- A40/ Witney Road (signalised junction)
- Eynsham roundabout (A40/ Lower Road/ B4440)
- A40/ Eynsham Road/ Cassington Road (signalised junction – 'Cassington Signals')
- A40/ Agrivert access (priority junction)
- B4449/ Cassington Road roundabout
- B4449/ B4044/ Oxford Road roundabout
- B4449/ Station Road/ Old Station Way roundabout
- Burleigh Road/ Yarnton Road/ The Green (priority junction)

Table 4.5 summarises the number of PIAs along the links by severity, for all traffic and for pedestrians and cyclists whilst Table 4.6 summarises the number of PIAs at the junctions, for all traffic and for pedestrians and cyclists .

Further review and analysis has been undertaken where there is more than one accident per annum along a section or at a junction and/or there is a PIA involving a vulnerable road user or a fatality.

Table 4.5 Summary of Recorded PIAs – Links (2013-2018)

Link	To	From	Total Vehicular (inc. motorcycle)				Pedestrian			Cycle	
			Fatal	Serious	Slight	Rate per Annum	Fatal	Serious	Slight	Serious	Slight
A: Lower Road	Lower Rd/ Church Road junction	Eynsham Roundabout (B4449/A40/Lower Rd)	-	-	5	1.0	-	-	-	-	-
B: Burleigh Road	Rail bridge	Burleigh Road/ Yarnton Rd junction	-	-	-	-	-	-	-	-	-
C: The Green / Yarnton Road	Burleigh Road/ Yarnton Rd junction/ The Green junction	The Green/ Eynsham Rd/ Church Lane junction	-	-	-	-	-	-	-	-	-
D: Eynsham Road	The Green/ Eynsham Rd/ Church Lane junction	A40/ Eynsham Road junction	-	-	1	0.2	-	-	-	-	-
E1: A40	A40 junction with western entrance to Barnard Gate Access Road	A40 junction with eastern access to Barnard Gate	-	1	6	1.4	-	-	-	-	-
E2: A40	A40 junction with eastern access to Barnard Gate junction	A40 junction with Elms Place	-	2	2	0.8	-	-	-	-	1
E4: A40	A40 junction with Witney Road	Eynsham Roundabout	-	1	-	0.2	-	-	-	-	-
E5: A40	Eynsham Roundabout	A40 junction with Cassington Road	-	1	5	1.2	-	-	-	-	-
E6: A40	A40 junction with Cassington Road	A40 junction with Agrivert access	-	4	5	1.8	-	-	-	1	-
F: Cassington Road	Cassington Road junction with A40	Cassington Road/ B4449 roundabout	-	-	-	-	-	-	-	-	-

Link	To	From	Total Vehicular (inc. motorcycle)				Pedestrian			Cycle	
			Fatal	Serious	Slight	Rate per Annum	Fatal	Serious	Slight	Serious	Slight
G1: B4449 1	Eynsham Roundabout (B4449/A40/Lower Rd)	Cassington Road/ B4449 roundabout	-	-	-	-	-	-	-	-	-
G2: B4449 2	Cassington Road/ B4449 roundabout	B4449/B4044/Oxford Road roundabout	-	-	-	-	-	-	-	-	-
G3: B4449 3	B4449/B4044/Oxford Road Roundabout	Station Road/B4449/Old Station Way roundabout	-	-	1	0.2	-	-	-	1	-
G4: B4449 4	Station Road/B4449/Old Station Way roundabout	B4449 junction with Foxley Farm access road	-	1	-	0.4	-	-	-	-	-
H: B4044	B4449/B4044/Oxford Road roundabout	Swinford Toll Bridge	-	-	1	0.6	-	-	-	-	1
Eynsham	-	-	-	3	5	1.4	-	-	-	-	-
Total			**0**	**13**	**31**	**-**	**0**	**0**	**0**	**2**	**2**

Table 4.6 Summary of Recorded PIAs – Junctions (2013-2018)

Junction	Total Vehicular (inc. motorcycle)				Pedestrian			Cycle	
	Fatal	Serious	Slight	Accident Rate per Annum	Fatal	Serious	Slight	Serious	Slight
Unnamed Road / A40 (Barnard Gate east access)	-	2	2	0.8	-	-	-	-	-
A40 / Elm Place	-	1	1	0.4	-	-	-	-	-
Cuckoo Lane / A40	-	1	7	1.6	-	-	-	-	-
A40 / Witney Road	-	-	2	0.4	-	-	-	-	-
Lower Road / A40 / B4440 Roundabout	-	5	15	4.0	-	-	-	2	2
Eynsham Road / A40 / Cassington Road	-	2	9	2.2	-	-	-	2	1
Agrivert Access / A40	1	1	2	0.8	1	-	-	-	-
B4449 / Cassington Road roundabout	-	-	2	0.4	-	-	-	-	1
B4449 / B4044 / Oxford Road roundabout	-	2	1	0.4	-	-	-	-	-
Station Road / B4449 / Old Station Way Roundabout	-	-	1	0.2	-	-	-	-	1
Burleigh Road/Yarnton Road	-	1	2	0.6	-	-	-	-	-
Total	**1**	**15**	**44**	**-**	**1**	**0**	**0**	**4**	**5**

Eynsham Village

The following PIAs were recorded within the central Eynsham Village area between 2013 and 2018:

- Hazeldene Close – one serious accident;
- Mill Street/High Street/Lombard Street/Acre End Street Junction – one slight accident;
- Witney Road/Acre End Street/Merton Close/Chillbridge Road mini roundabout – one slight and one serious accident;
- Back Lane – one slight accident;
- Eynsham Medical Centre Access – one slight accident;
- Dovehouse Close – one slight accident; and
- Wytham View – one serious accident.

Accident Hotspots

The following section discusses the accident zones where the recorded rate exceeds one accident per annum and/ or there is more than one occurrence of an accident involving a vulnerable road user or a fatality.

Link E1 - A40: Barnard Gate west access to Barnard Gate east access

Seven accidents occurred on the A40 between the Barnard Gate accesses, of which six were identified as slight and one as serious. Factors in these incidents included:

- a vehicle attempting a U-turn;
- an elderly driver failing to judge the speed of the vehicle in front;
- a motorcyclist under the influence of alcohol losing control;
- a poor overtaking manoeuvre from a motorcyclist;
- a motorcyclist losing control due to gravel on the road; and
- Two incidents of a hit and run driver, of which there is limited detail available regarding the circumstances of the accidents.

Link E4 - A40: Eynsham Roundabout to Cassington Road Junction

Six accidents occurred between the Eynsham Roundabout and Cassington Road Junction of which five were slight and one was serious. The causation factors of these accidents included four incidences where vehicles rear shunted the vehicles in front in queuing traffic due to poor concentration e.g. using a mobile phone. The remaining two incidents involved a driver under the influence of alcohol hitting a vehicle whilst on the wrong side of the carriageway, and a driver 'blacking out' due to a medical episode.

Link E5 - A40: Cassington Road Junction to Agrivert Access Junction

Nine accidents were recorded between the Cassington Road Junction and the Agrivert Access Junction of which four were serious (including one cyclist) and five were slight. The serious incident involving the cyclist resulted from a vehicle turning on to a small side road (Horsemere Lane) against a no entry sign which was obscured by vegetation, then hitting the cyclist. Other factors included:

- A vehicle hitting a motorcycle whilst attempting to join queuing traffic from a private road.
- A vehicle hitting a motorcycle whilst attempting a U-turn.
- The remaining six accidents all involved vehicles shunting the rear of vehicles in front whilst queuing due to poor concentration.

A40 / Cuckoo Lane Junction

Eight accidents were recorded at the A40/Cuckoo Lane junction of which one was identified as being serious, and the remaining were slight. The serious incident involved a motorcycle accelerating out of the junction on to the A40 and colliding with the rear of the vehicle in front which was slowing due to queuing traffic. Three of the accidents were attributed to vehicles failing to give way at the junction. The remaining incidents were attributed to vehicles failing to stop/shunting, one of these being due to a vehicle slowing to allow a bus to leave the bus stop causing an additional vehicle to crash in to the rear.

Eynsham Roundabout (Lower Road / A40 / B4440 Roundabout)

Twenty accidents were recorded at the Eynsham Roundabout of which five were serious (including three cyclists) and 15 were slight (including one cyclist). The serious accidents involved two separate incidents where cyclists were hit on the roundabout after vehicles failed to give way and a cyclist on the cycle path lost control upon hitting mud. The remaining serious accidents involved a vehicle hitting a motorcycle whilst changing lanes in queueing traffic and a driver swerving and losing control whilst exiting the roundabout. The eleven slight accidents were attributed to the following factors:

- Vehicles failing to stop/shunting of which two were in wet conditions;
- One incident of a driver suffering a medical episode;
- One incident of vehicles moving out of the way of an ambulance;
- A vehicle hitting a motorcycle whilst changing lanes in queueing traffic;
- A cyclist clipping a queuing vehicle due to poor concentration;
- A driver under the influence of alcohol hitting the central island of the junction.

Eynsham Road / A40 / Cassington Road

Eleven accidents were recorded at this junction of which two were serious (including two cyclists) and nine were slight (including one cyclist). The two serious accidents both occurred when cyclists crossed the A40 at the toucan crossing, disobeying the red man signal and then subsequently being struck by a vehicle. The slight accident involving a cyclist occurred on the Eynsham Road crossing point where the cyclist had manoeuvred between stationary queueing traffic. Five accidents were attributed to failing to stop/shunting, largely due to queuing traffic. The remaining accidents were attributed to a motorcycle failing to stop for a red light, a driver suffering a medical episode and failing to stop for a red light, and a driver turning in to the wrong lane whilst entering the junction from Eynsham Road (the directional traffic bollard was missing at the time of incident).

B4449 Stanton Harcourt Road

Whilst beyond the review period considered as part of the accident analysis for this evidence base, there was a fatal accident involving a teenager cyclist, in November 2018. As with any fatal accident, OCC will work with the police to review the circumstances of the accident and consider any mitigation that might be required.

5. Sustainable Transport

This Evidence base sets out the current provision as regards sustainable transport; encouraging and facilitating cycling, walking (and horse riding) will be a priority of the Transport Strategy.

5.1 Pedestrian Connectivity

Public Rights of Way

The Public Right of Way (PRoW) network including footways, bridleways and byways in the vicinity of the West Eynsham SDA and Garden Village SLG is shown in **Figure 5.1**:

- **Garden Village SLG:** A bridleway (PRoW 206/11) runs south west to north east from Cuckoo Lane to Lower Road, with another route connecting into it from the A40 (PRoW 206/31), which also crosses the A40 at a staggered signal controlled crossing. Two footpaths connect off the bridleway and run northwards, providing links to The Green and Freeland (PRoWs 206/12 and 216/3) and to Church Hanborough (PRoWs 206/10 and 238/5)
- **West Eynsham SDA:**
    - A footpath runs east-west along the route of the dismantled railway in the southern part of the site (PRoW 206/30);
    - Chilbridge Road, which runs through the site into Eynsham, is a public bridleway (PRoW 206/19). Chilbridge Road allows vehicular access through the site but use is restricted by 'no-through road' and 'private - access only' signs. It is a popular point of access for walking and cycling into open countryside for Eynsham residents as noted in the draft Eynsham Neighbourhood Plan.

A40 Pedestrian Crossing Points

The pedestrian provision along the A40 and crossing points between Eynsham and the Garden Village site are shown in **Figure 5.2**. Current pedestrian provision within the vicinity of the Garden Village and West Eynsham SDA sites include a shared cycle/footway on the northbound side of the A40 which is also mirrored on the southbound side from Witney Road eastwards, both of which have a typical width of 2 metres and are set back from the carriageway by grassed verges.

Details about existing and future pedestrian crossing points is provided in Section 7 of this Report whilst Section 3 provided feedback on improvements to pedestrian (and cycle) connectivity that people would like to see.

Additional community feedback has indicated the need to provide crossings for path users where the existing PRoW network meets the B4449 at Eynsham. There are three such locations at PRoW 206/5, 206/2 and 206/8. These crossing points provide access to the Eynsham allotments, Stanton Harcourt and Eynsham Primary School, respectively.

Key

- PRoW footpath
- PRoW bridleway
- PRoW byway
- National trail/long distance route
- National Cycle Network 442
- Local rail routes
- Rail station
- Offroad cycle route

0 m 1000 m

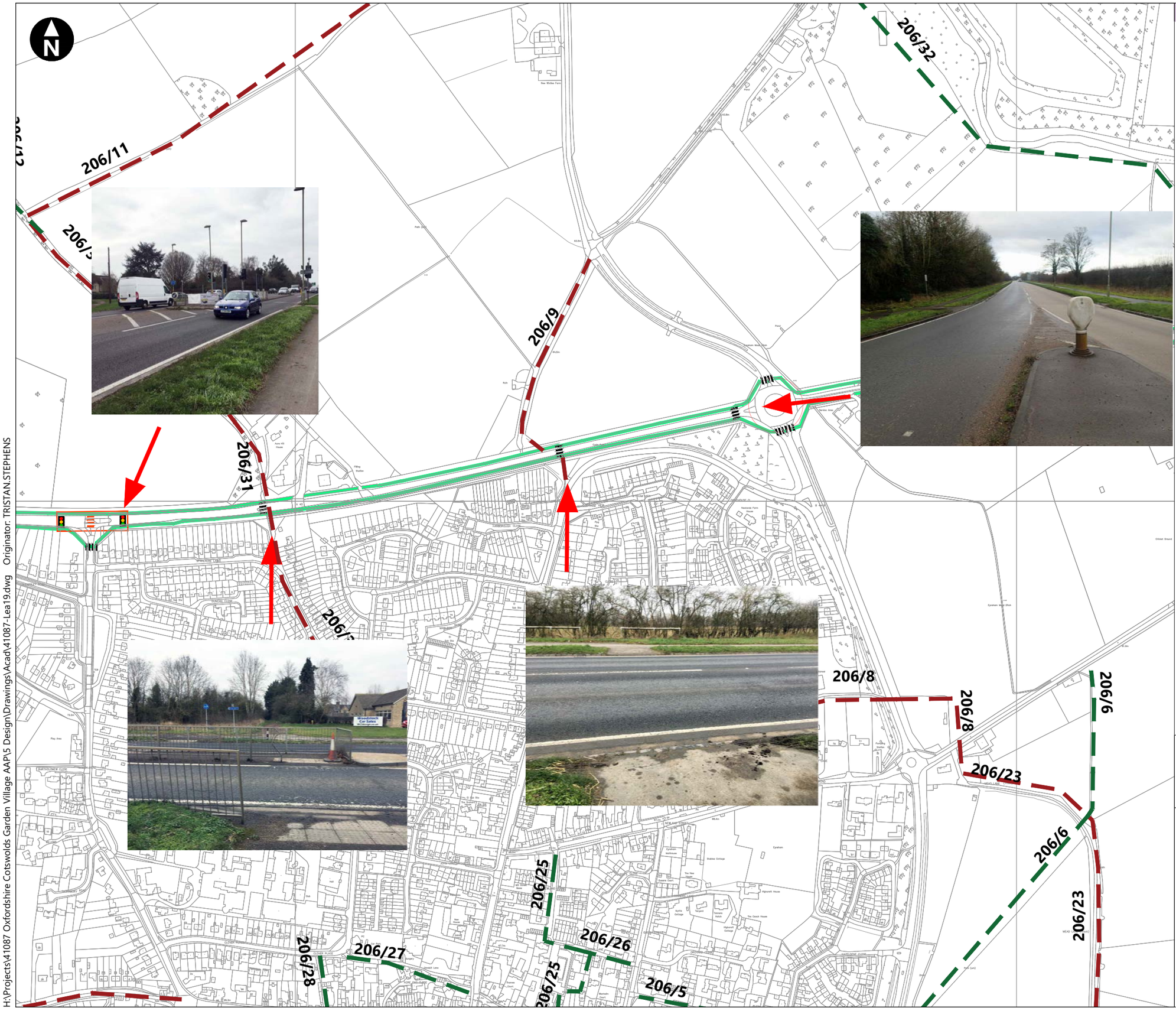
Scale 1:20,000 @ A3

Oxfordshire Cotswolds Garden Village AAP

Figure 5.1
Public Rights of Way and Cycle Routes

May 2019

wood.



Key

- Signal controlled vehicular junction
- Uncontrolled pedestrian crossing
- Signal controlled pedestrian crossing
- Public Right of Way Footpath
- Public Right of Way Bridleway
- Footway/cycleway with separating grass verge

0 m — 300 m

Scale 1:5000 @ A3

Oxfordshire Cotswolds Garden Village AAP

Figure 5.2
A40 Pedestrian Crossing Points

May 2019

wood.

H:\Projects\41087 Oxfordshire Cotswolds Garden Village AAP\5 Design\Drawings\Acad\41087-Lea19.dwg Originator: TRISTAN.STEPHENS

5.2 Cycle connectivity

Cycle connectivity is shown in **Figure 5.1** and is generally restricted to the shared cycle/footways as described above, which route along the A40 and provide a link to Oxford in the east, and Witney to the west (north side of the carriageway only). For local trips, cycling provision is mostly limited to the on-road carriageways.

National Cycle Route (NCR) 442 routes approximately 3.5km north of the Garden Village SLG between Hanborough Rail Station and rural destinations to the north. NCR 5 is located approximately 7km east of the Site and routes from Oxford City Centre north, also providing a link to the wider NCR within Oxford. NCR 57 is located approximately 7km to the west of the Site and routes through the centre of Witney where it links to NCR 577 before continuing to rural destinations further west.

It is noted that cyclists are also permitted to use public bridleways and byways which are detailed in Section 5.1 above.

Cycle counts

A cycle Automatic Traffic Counter located east of Cassington signals recorded the number of cyclists travelling eastbound and westbound along the A40 cycle path. It can be seen that around 260 to 300 total movements were observed each day between 0600 and 2000 during week commencing Monday 2nd July.

BIKE ATC AT SOUTH SIDE A40 EAST OF CASSINGTON SIGNALS (Mon 2nd to Fri 6th July 2018)

	0600-0700	0700-0800	0800-0900	0900-1000	1000-1100	1100-1200	1200-1300	1300 - 1400	1400 - 1500	1500 - 1600	1600-1700	1700-1800	1800-1900	1900-2000	TOTAL	
Mon 2nd July (westbound)	1	8	6	3	4	1	4	2	4	4	19	43	33	15	147	WESTBOUND
Tues 3rd July (westbound)	2	6	8	4	1	1	2	1	6	7	29	55	37	11	170	
Weds 4th July (westbound)	0	2	11	2	5	1	2	1	1	6	21	52	25	16	145	
Thurs 5th July (westbound)	2	3	4	3	1	1	0	2	6	9	23	46	25	19	144	
Fri 6th July (westbound)	2	1	6	2	2	0	2	3	9	3	21	22	24	3	100	
Mon 2nd July (eastbound)	8	42	28	12	2	2	1	2	3	1	0	7	7	0	115	EASTBOUND
Tues 3rd July (eastbound)	10	45	39	13	6	1	1	6	1	1	4	6	2	0	135	
Weds 4th July (eastbound)	6	41	28	6	4	4	3	0	2	2	3	4	7	1	111	
Thurs 5th July (eastbound)	14	40	27	13	1	2	3	3	1	0	4	3	2	1	114	
Fri 6th July (eastbound)	7	25	16	10	3	0	0	0	1	2	3	2	2	0	71	
Mon 2nd July (total)	9	50	34	15	6	3	5	4	7	5	19	50	40	15	262	TWO-WAY
Tues 3rd July (total)	12	51	47	17	7	2	3	7	7	8	33	61	39	11	305	
Weds 4th July (total)	6	43	39	8	9	5	5	1	3	8	24	56	32	17	256	
Thurs 5th July (total)	16	43	31	16	2	3	3	5	7	9	27	49	27	20	258	
Fri 6th July (total)	9	26	22	12	5	0	2	3	10	5	24	24	26	3	171	

Cycle audits

Cycle audit work that has been undertaken as part of the Open Oxfordshire: Cycle Infrastructure Evaluation project (CIE) will also be used to inform the cycle strategy for the Eynsham area. CIE is a project that was

led by OCC and was funded by the Open Data Institute (ODI), with the aim of creating a digital cycle route auditing tool that could be used to map infrastructure and inform the public and policy makers of its existing state. The study area comprised Hanborough, Witney and Eynsham. Further detail can be found at: https://oxfordshire.maps.arcgis.com/apps/MapJournal/index.html?appid=d25511cb32f74f4db32602fe5458c1e1

5.3 Equine provision

Figure 5.1 illustrates the bridleway provision in the study area; ensuring that links connect seamlessly with the key livery yard and stabling facilities in the vicinity will be a key consideration of the Transport Strategy. Maintaining and enhancing the existing provision, and ensuring safe crossing facilities are provided as part of the infrastructure provision will be important.

5.4 Bus provision

Currently the nearest bus stops to the Garden Village SLG are located on the A40, and in the north of Eynsham on Witney Road, Spareacre Lane and Hanborough Road, a total of 10 stops are within 400m of the SDA site boundary.

All bus stops are in the form of a simple pole and information flag with most benefitting from bus shelters.

Bus services are illustrated in **Figure 5.3** with the frequency of the services summarised in Table 5.1.

Table 5.1 Existing Bus Provision

Service	Service Operator	Route	Mon-Fri (Peak AM)	Mon-Fri (Peak PM)	Mon – Fri (Daily)	Sat (Daily)	Sun (Daily)
853	Swanbrook Coaches	Oxford City Centre – Gloucester	0	0	3	4	1
S1	Stagecoach Oxfordshire	Carterton – Oxford via Eynsham	8	13	56	59	42
S2	Stagecoach Oxfordshire	Carterton – Oxford	3	4	37	22	0
S7	Stagecoach Oxfordshire	Witney - Headington	1	1	6	0	0

Source: www.Traveline.info, Peak AM (07:00 – 09:00), Peak PM (16:30 – 18:30)

In addition, the 233 service routes some distance north of the Garden Village SLG on the A4095 between Burford and Witney and includes a stop at the entrance to Hanborough Station. This service runs Monday to Saturday providing services every half an hour. Stops on this route are generally comprise simple pole and information flag format stops.

Section 3 sets out feedback received regarding bus service provision in response to the Issues Paper Consultations for the Garden Village AAP and West Eynsham SPD.

5.5 Rail

The nearest railway station is Hanborough which is located approximately 3.5km crow fly distance north of the Garden Village SLG .

Key

- S1 - Oxford City Centre - Carterton
  15 minutes frequency
- S2 - Oxford - Carterton
  30 minutes frequency
- S7 - Witney - Headington
  4 services /day
- 233 - Woodstock - Burford
  30 minutes frequency
- 853 - Oxford- Gloucester
  3 services / day
- Local rail route
- Rail station

0 km 1.5 km

Scale 1:25,000 @ A3

Oxfordshire Cotswolds Garden Village AAP

Figure 5.3
Bus Services

May 2019

wood.

Hanborough is located on the Cotswold Line between the major stations of Worcester Shrub Hill and Oxford with other direct services including London Paddington, Reading and Hereford.

The station currently has car parking provision for 48 spaces and sheltered cycle storage for 30 cycles. There is no ticket office, waiting room, toilets or refreshments/retail, such as a coffee shop, at the station. A covered shelter on the platform, seating and ticket machines are provided. Further information about future proposals for Hanborough Station are provided in Section7.5.

The number of people using the station has almost quadrupled in past 10 years, from 76,580 passengers in 2006/07 to 238,580 in 2016/17.

Table 5.2 Train Services via Hanborough

Destination	Service Frequency			Journey Time
	Mon-Fri	Saturday	Sunday	
Oxford	2 per hour during AM peak time. 1 per hour for remainder of the day	1 per hour	1 per hour	Between 10-13 minutes
London Paddington	2 per hour during AM peak time. 1 per hour for remainder of the day	1 per hour	1 per hour	Between 1hr 03 minutes - 1hr 15 minutes
Worcester Shrub Hill	1 per hour	1 per hour	1 per 1-2 hours	Between 57 minutes – 1hr 15 minutes
Reading	2 per hour during AM peak time. 1 per hour for remainder of the day	1 per hour	1 per hour	Between 33 minutes - 40 minutes
Hereford	5 per day	4 per day	4 per day	Between 2hr - 2hr 21 minutes

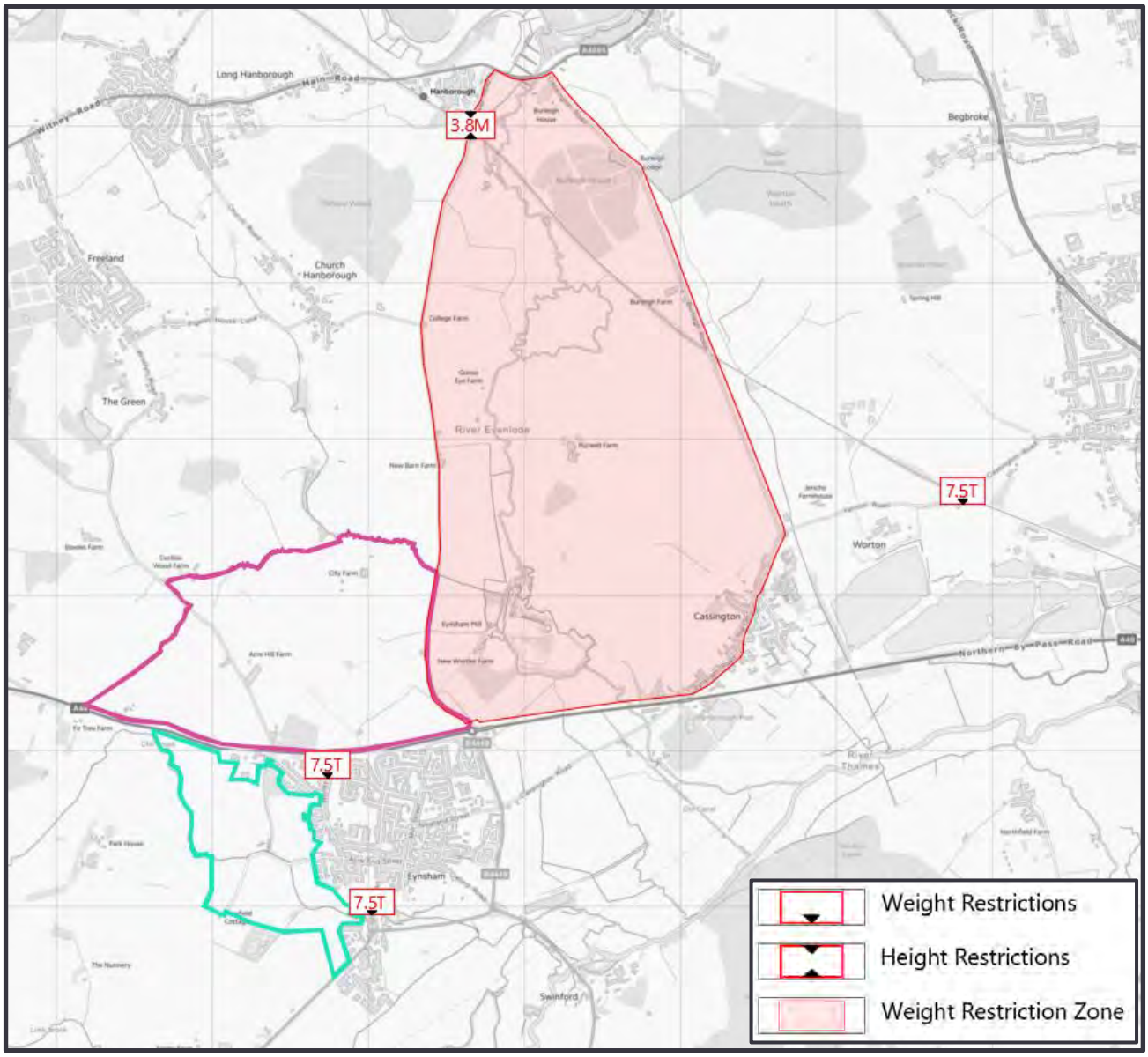
Source: https://www.nationalrail.co.uk

There are current proposals for improvements at Hanborough station and increased services along the Cotswold Line. These are discussed in more detail in **Section 7.5**.

5.6 HGV Routing

Figure 5.4 shows current HGV restrictions. This includes a 7.5T weight restriction on Station Road in the south of Eynsham Village, on Witney Road from the junction with the A40 and on the road bridge over the rail lines on Yarnton Road. A 7.5T weight restriction area is located to the east of the development sites and encompasses Lower Road, Mill Lane, Cassington Road and Burleigh Road, whilst also covering the major through route of Cassington Village (namely Yarnton Road, The Green and Eynsham Road). A 3.8m height restriction is located on Lower Road where the road underpasses the rail bridge approximately 420m south of the junction with the A4095.

Figure 5.4 HGV Restrictions within the vicinity of sites



6. Existing Travel Patterns

6.1 Introduction

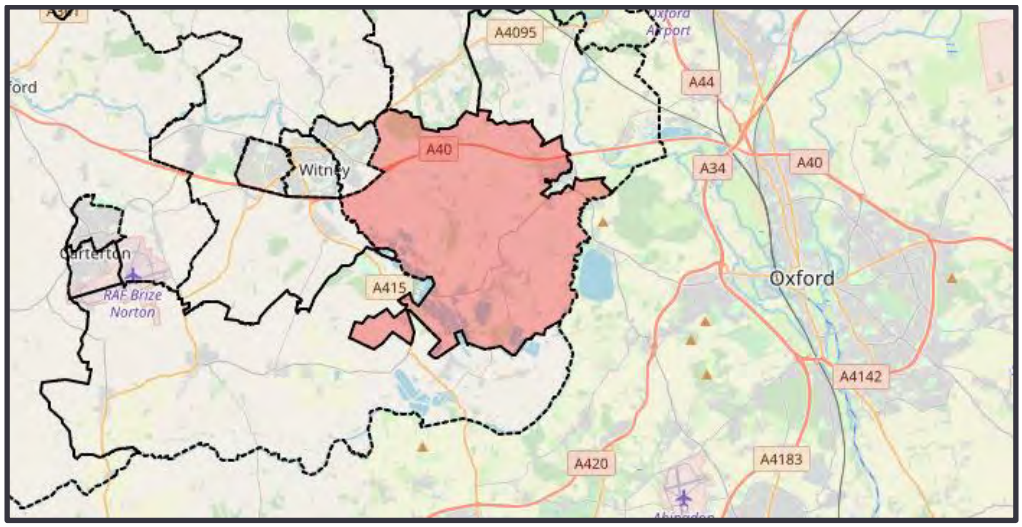
An analysis has been undertaken of the Office for National Statistics (ONS) 2011 Census for travel to work data in the Eynsham and Cassington locality, in order to gain an understanding of travel patterns for those living and working in the area. Whilst the data is somewhat dated now, it does nonetheless provide a useful insight into the origins and destinations of those travelling to and from work in the Eynsham area.

The transport strategy for West Eynsham and the Garden Village will however take a forward-thinking approach to understand how 2011/current observed travel patterns might evolve as Local Plan proposals, including associated new infrastructure, come forward. The impact of new technology and smart innovations on how people move and connect with the areas in which they work or need to access, will also be a critical aspect to consider. This whole topic area is a focus for OCC's Innovation and Research Team who continue to work with partners in business and academia, to challenge the status quo and drive new solutions to create a resilient and sustainable future for Oxfordshire. As part of that work, OCC is developing a 'Strategic Sites Framework' that will provide the mechanisms required to turn planned developments into smart, connected places that enhance and build healthy, sustainable communities. It is essential that these mechanisms are considered at a very early stage of the masterplanning process for the West Eynsham SDA and Garden Village SLG.

6.2 Census analysis

Middle Layer Super Output Area (MSOA) 'West Oxfordshire 011' has been used to represent Eynsham and the wider area as shown in **Figure 6.1**. This MSOA does exclude the south east sector of Eynsham but is considered suitable as a proxy for transport movements of relevance to the Garden Village SLG and West Eynsham SDA.

Figure 6.1 MSOA: West Oxfordshire 011 Area Boundary Source: www.nomisweb.co.uk



6.3 Travel to Work Patterns

Figure 6.2 shows the modal splits for the method of travel to work from 2011 MSOA 011. It can be seen that the majority of people drive to work (67%) with an additional 5% travelling in a car/van as a passenger. 7% of people walk to work with an equal proportion cycling. Only 1% travel by train.

In summary, 27% of employed residents travel to work from West Oxfordshire 011 by sustainable forms of transport which is similar to the national average of 30% (DFT: Travel to work mode share, Great Britain 2016). The greatest modal share within this is commuting by bus at 12%. The majority of workplace destinations are located either within the immediate area around Eynsham, or within Oxford and Witney.

Figure 6.2 Mode of Travel to Work in 2011 *Super Output Area – Mid Layer: West Oxfordshire 011*

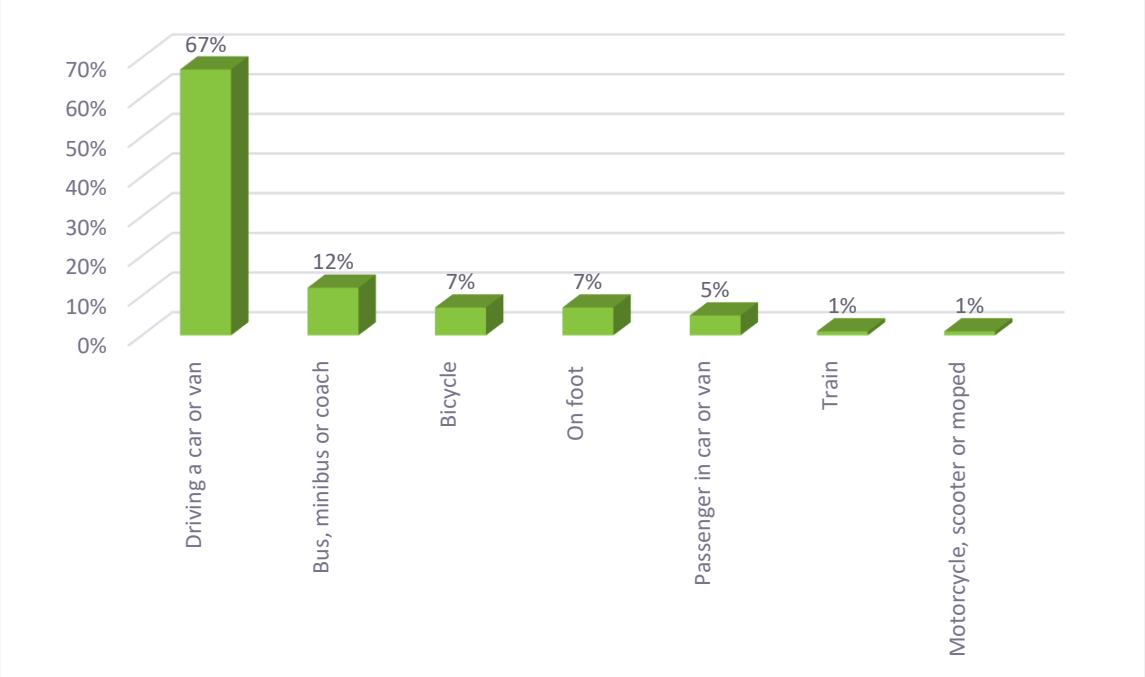
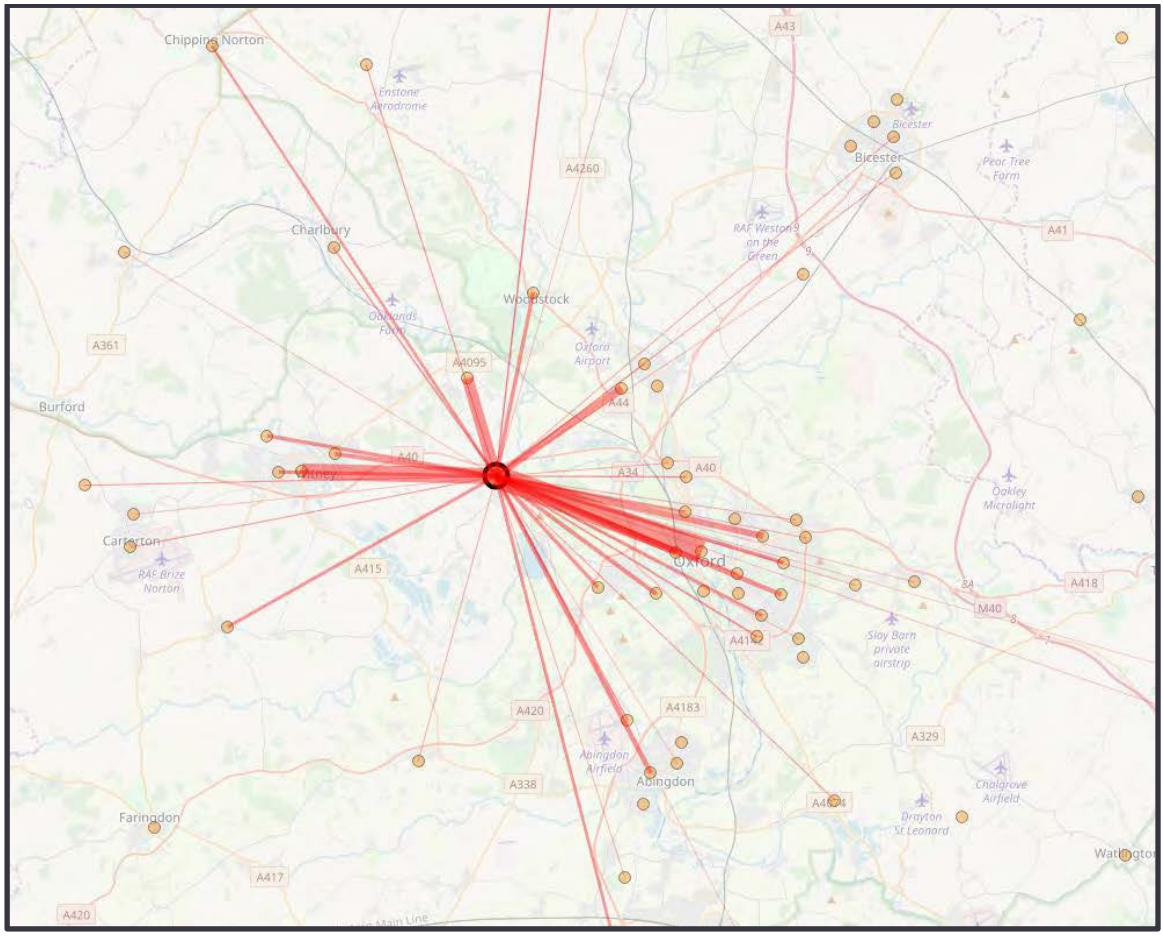


Figure 6.3 illustrates the place of work to which residents from West Oxfordshire 011 travel by all modes of transport. It can be seen that the highest proportion of respondents (the wider the line, the greater the number of people) are travelling to work in central Oxford, with additional persons travelling to areas in East Oxford. Table 6.1 provides further detail regarding the actual numbers of people travelling to the different destinations shown in Figure 6.3.

Figure 6.3 Travel to work from MSOA 011 (All Modes) – from 2011 Census



Source: commute.datashine.org.uk

Table 6.1 Travel to work from MSOA 011 (All Modes) – from 2011 Census

Work Location Population is Travelling to For Work	No, Persons Travelling to Destination	MSOA covers part of Postcode Area …	Approximate Location of MSOA
Mainly Work At/ From Home	384		
Within MSOA 011	361	Ox29	
No Fixed Place	270		
Oxford 008	239	Ox1, Ox2	Central Oxford
West Oxfordshire 010	166		
West Oxfordshire 006	121	Ox29	Long Hanborough
Cherwell 019	79	Ox5	Yarnton
Oxford 009	77	Ox2, Ox1	Oxford: Osney
Oxford 006	66	Ox3	Oxford: Headington – Headley Way Area
Oxford 013	50	Ox4, Ox3	Oxford: Cowley

Work Location Population is Travelling to For Work	No, Persons Travelling to Destination	MSOA covers part of Postcode Area …	Approximate Location of MSOA
Vale of White Horse 006	46	Ox14	Abingdon
West Oxfordshire 008	43	Ox28	Witney
Vale of White Horse 002	43	Ox2, Ox1	Oxford: Hinksey
West Oxfordshire 004	41	Ox20, Ox29, Ox5	Woodstock
Vale of White Horse 001	39	Ox2, Ox13	Cumnor
West Oxfordshire 007	39	Ox29	West Witney
Oxford 010	39	Ox3	Oxford: Headington/ Old Road Area
West Oxfordshire 009	37	Ox28	Witney: Deer Park Area
West Oxfordshire 015	34	Ox18, Ox29	Bampton
Oxford 015	30	Ox4	Cowley
West Oxfordshire 001	26	Ox7	Chipping Norton
Vale of White Horse 015	26		
Oxford 003	25	Ox2	Oxford: Woodstock Road
Oxford 016	20	Ox4	Littlemore
West Oxfordshire 005	18	Ox7, Ox29	Charlbury
Vale of White Horse 003	18	Ox13, Ox14, Ox 1	Cothill Area
Oxford 011	18	Ox4	Oxford: Cowley
Other Oxford	48		
Other West Oxfordshire	51		
Other Vale of White Horse	23		
Other Cherwell	63		
Other South Oxfordshire	32		
Westminster	6		
Islington	6		

Note: Table only includes those flows where 6 or more persons are travelling to that destination.

Table 6.2 provides a summary of Districts to which the population is travelling for work, when locations to which 6 or more persons are considered. It can be seen that 24% of the MOSA 011 travel to work in Oxford with central Oxford (Oxford MOSA 008 – see Table 6.1), being unsurprisingly the place of work for the highest proportion of the population.

Table 6.2 Summary of districts to which population is travelling (Source: Travel to work from MSOA 011 (All Modes) – from 2011 Census)

Work Location (District) That Population is Travelling to For Work	No, Persons Travelling to Destination	Percentage
Oxford City	612	24%
West Oxfordshire District	576	22%
Vale of White Horse District	195	7.5%
Cherwell District	142	5.5%
South Oxfordshire District	32	1%
Mainly work at home	384	15%
Within MOSA West Oxfordshire 011	361	14%
No fixed place/ Other -Westminster/ Islington	276	11%
TOTAL	2,578	100%

Note: Table only includes those flows where 6 or more persons are travelling to that destination.

Figure 6.4 illustrates the place of work travelled by car drivers whilst **Figure 6.5** shows the place of work for those travelling by bus. The former shows widespread distribution of destinations to which people are driving whilst the latter shows a concentration of journeys to Oxford, with some journeys to Witney.

Figure 6.4 Travel to place of work - car driving (source: datashine)

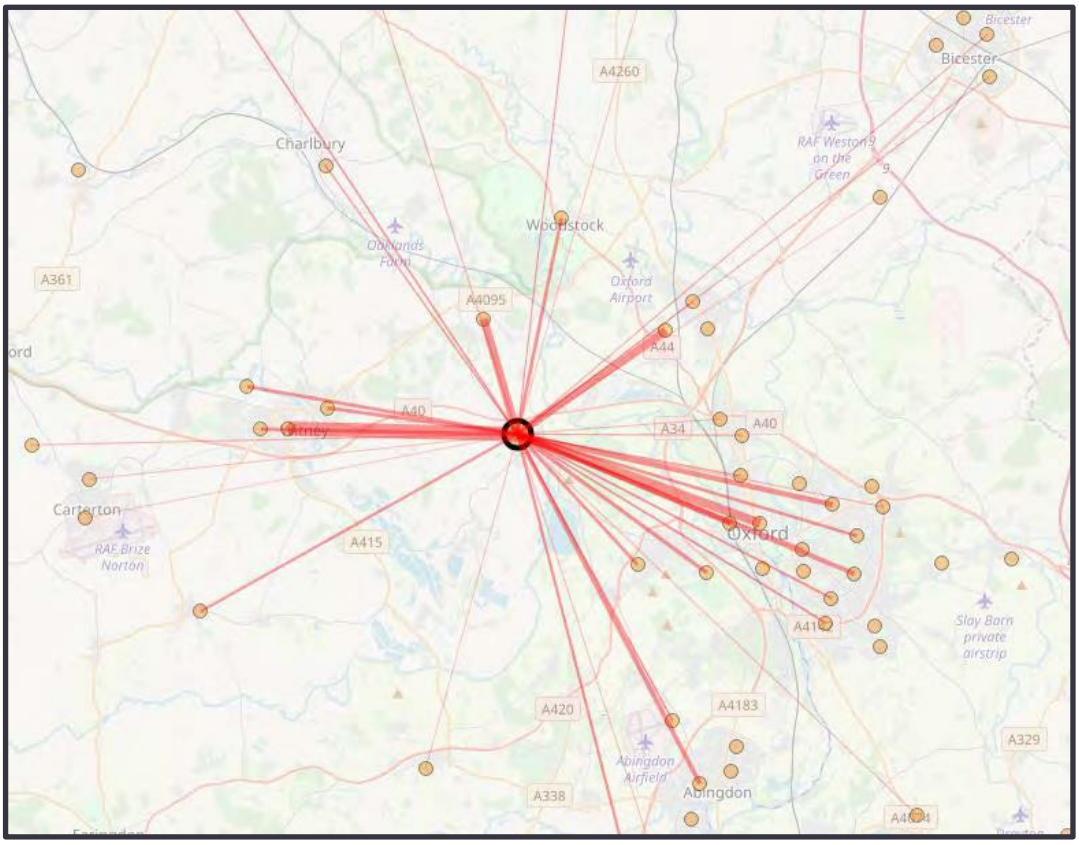


Figure 6.5: Travel to place of work – bus (source: datashine)

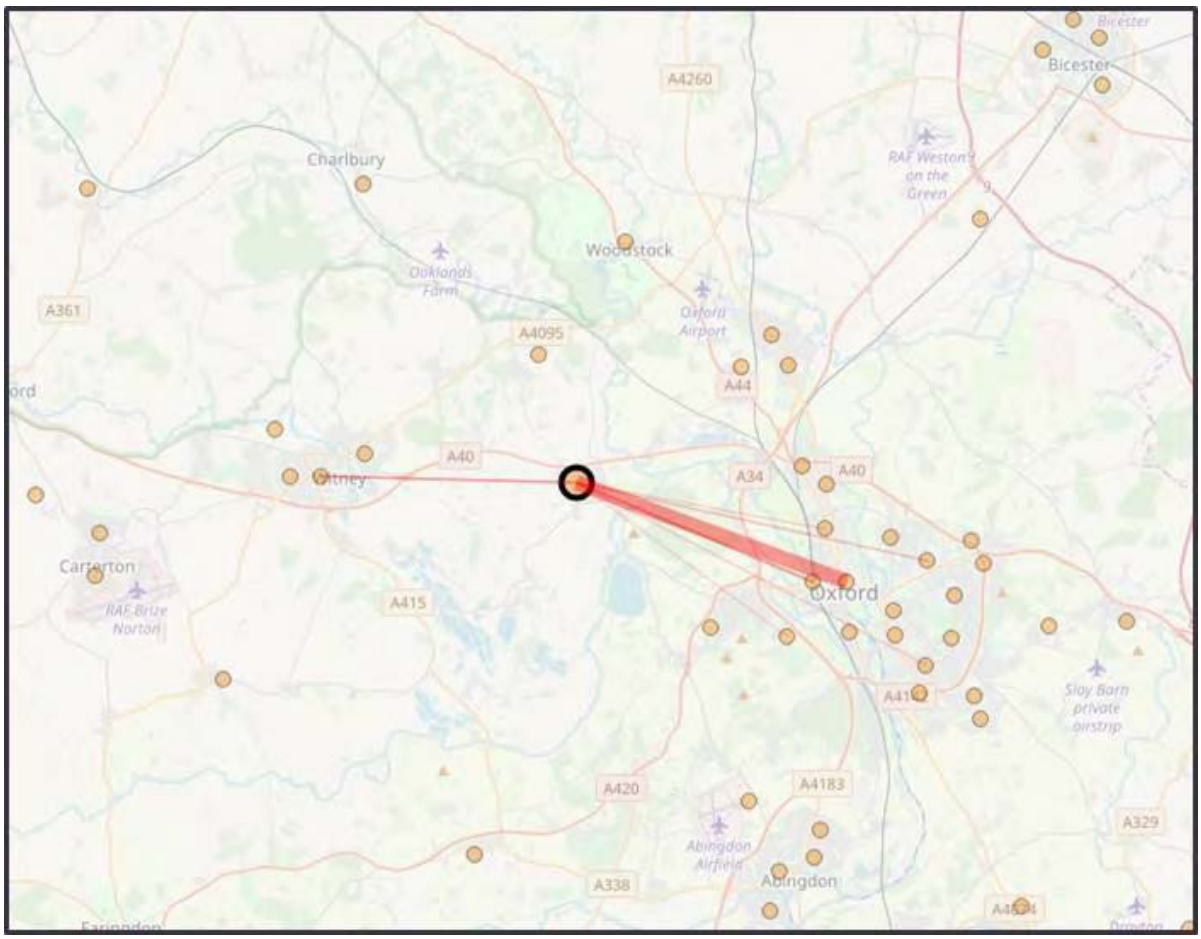
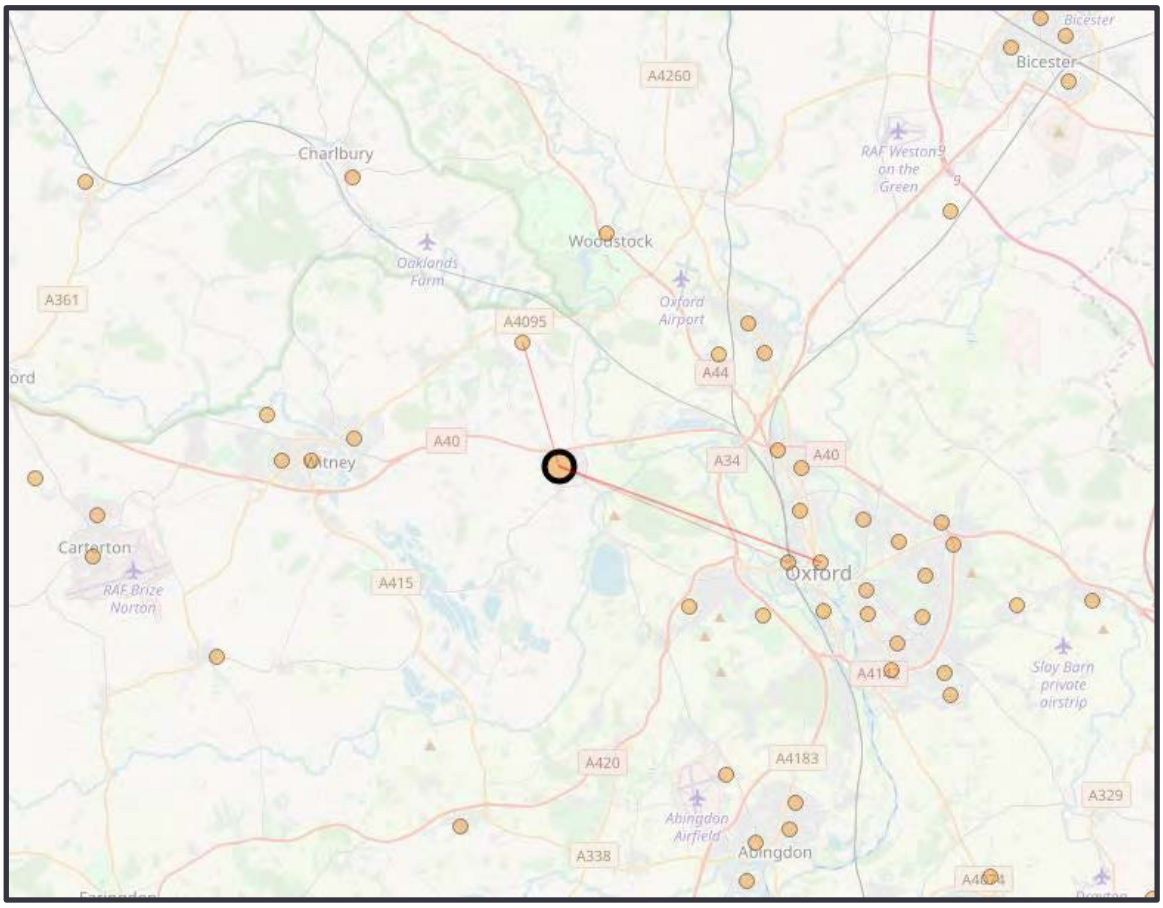


Figure 6.6 illustrates the place of work travelled by cyclists. In summary, for MOSAs to which where 6 or more people travel:

- 64 people travel by bike to locations within MOSA 011.
- 26 people travel by bike to Oxford (MOSA Oxford 008 and 009).
- 12 people travel by bike to West Oxfordshire 006 (Long Hanborough).

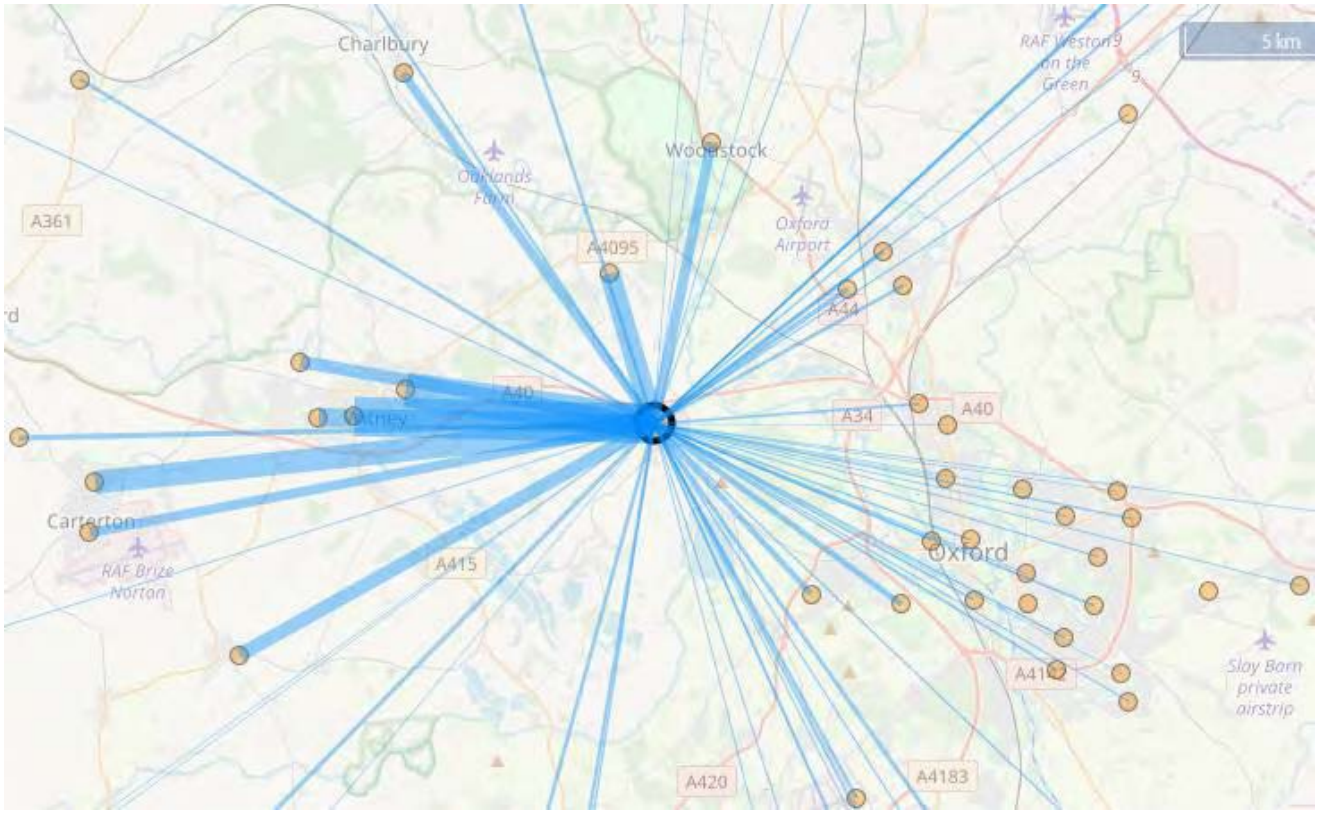
Figure 6.6 Travel to place of work - cycle



6.4 Travel to the Eynsham area for work purposes

An assessment was also undertaken of the locations from which people are travelling to work in the West Oxfordshire 011 MOSA area (see **Figure 6.7**). This is helpful to inform the understanding of where people might travel from to access employment opportunities at the Garden Village. However, as discussed at Section 6.1 the status quo might not necessarily apply in the future. It can be seen that the majority of people travel to work from areas west of Eynsham and particularly from the areas around Witney, Bampton, Carterton, Woodstock, Charlbury and Hanborough.

Figure 6.7 Travel to work in MOSA West Oxfordshire 011



7. Future Transport Infrastructure Schemes

Committed and proposed infrastructure improvement schemes will need to be considered as part of the overall Transport Strategy for the Garden Village and West Eynsham sites. These are indicated in **Figure 7.1**.

7.1 A40 Science Transit 2 (ST2): Phase 1

The A40 Proposed Eynsham Park & Ride with Bus Lanes Scheme (A40 Science Transit 2, Phase 1 of the A40 Strategy) has been provisionally allocated £35 million funding from the Department for Transport through the Local Growth Fund. An amount of local funding (£1.2m from developer contributions) will also be included in the scheme budget, totalling £36.2 million.

To release the main Local Growth Fund funding, a series of business cases are currently being completed for approval by the Department of Transport. An Outline Business Case is currently being prepared and is due for submission by June 2019. The Full Business Case is to be submitted once all planning approvals and final implementation costs are known; anticipated to be by late Autumn 2019, the outcome of which is expected to be announced by the end of 2019.

The ST2 scheme is designed to significantly improve the reliability, frequency and variety of destinations in Oxford served by public transport by:

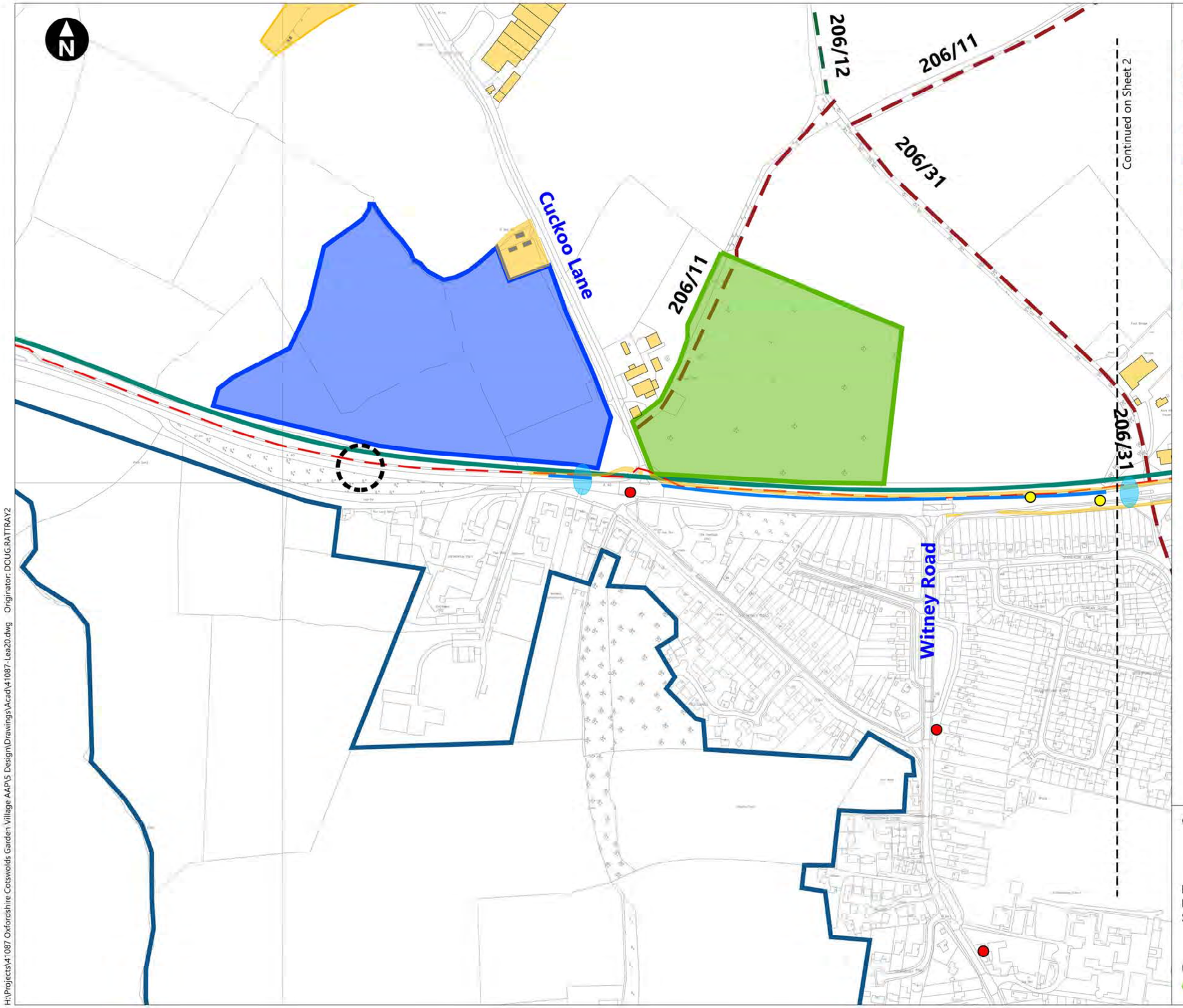
- Providing a congestion-free route for public transport on the A40 eastbound approach to Oxford.
- Encouraging people to switch from using cars to public transport.
- Improving journey times improving reliability of public transport along the A40.

The planning application for the Park & Ride is being submitted in May 2019, with the scheme expected to commence construction in early 2020. The scheme comprises the following elements:

1. Eynsham Park & Ride

The proposed Park & Ride will include provision of:

- Up to 1000 car parking spaces, with the scheme designed with landscaping principles at the fore. Blue badge parking spaces and spaces for electric vehicle charging and motorcycles will be provided.
- An area for short stay parking for drop-off/ pick up.
- Four bus stops and three bus stands, with passengers able to board buses for destinations towards Witney and Carterton in the west, and Oxford in the east.
- Sheltered passenger waiting facilities and an associated public realm area.
- Secure, covered cycle parking dispersed across the site to enable good access to the alternative cycle routes into the site. Space has been allocated for the potential future increase in cycle parking as required and as the Local Plan development sites come forward.



Oxfordshire Cotswolds Garden Village AAP

Figure 7.1
Future A40 Infrastructure Schemes
Sheet 1 of 2

May 2019

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Continued on Sheet 1

206/9

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206/6

Cassington Road

Key

- Oxfordshire Cotswolds Garden Village
- PRoW footpath
- PRoW bridleway
- Existing Offroad cycle route
- Proposed Bus Lanes
- Proposed Bus Stops
- Modifications to Junction
- Proposed improvements to Footway/cycleway
- Proposed crossings
- Greenbelt

0 m 100 m 200 m

Scale 1:4000 @ A3

Oxfordshire Cotswolds Garden Village AAP

Figure 7.1
Future A40 Infrastructure Schemes
Sheet 2 of 2

May 2019

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2. Two access points to the Park & Ride

- **Eynsham Park & Ride Access Roundabout:** The primary access junction will be a priority roundabout with the A40, to the west of Cuckoo Lane and the eastern access of the layby to the south of the A40. The junction will be designed to accommodate current predictions of future traffic volumes up to 2031, with sufficient stacking capacity on the A40 approaches to ensure that vehicles accessing the Park & Ride are not blocked by through traffic approaching the junction. On opening, all buses accessing the site will do so via the roundabout. On egress, buses heading west will use the roundabout, while those heading east will be provided with a dedicated lane which ties directly into the eastbound bus lane proposed along the A40, thereby minimising delay.
- **Secondary (entry only) access from Cuckoo Lane:** In order to provide enhanced access from the villages to the north of the site, such as Freeland and Long Hanborough, a secondary access (entry only) is proposed from Cuckoo Lane in the form of a priority T-junction. This will avoid the need for cars arriving from the north to turn right from Cuckoo Lane onto the A40 to reach the Park & Ride, which can be a difficult manoeuvre. This secondary access will also function as an emergency access.

3. New bus lanes along the A40

The scheme includes the provision of bus lanes along the A40 between the Park & Ride site and Duke's Cut canal bridge near Wolvercote towards Oxford:

- **The eastbound bus lane:** will run along the A40 corridor, with periodical gaps on junction approaches. It is proposed that the carriageway is widened (within the highway boundary) in order to allow the segregation of the bus lane from general traffic along the northern edge of the carriageway. The bus lane will necessitate adjustments to the junctions and the provision of bus gates to give priority to buses joining the general traffic lane. Specifically:
    - **The bus lane will start at the Park & Ride** and will end approximately 30 metres before the junction with Cuckoo Lane before restarting beyond the (reconfigured) Cuckoo Lane junction.
    - **The bus lane then continues until the proposed Pegasus crossing immediately to the west of the Esso petrol station,** restarting after the access to the petrol station but with a short gap to allow vehicles to exit the petrol station.
    - **The bus lane then continues until approximately 50 metres before the Eynsham Roundabout,** restarting approximately 70 metres after Eynsham Roundabout.
    - **The bus lane then continues up to the Cassington Signals.** At these signals, buses will have their own signals and associated green phase before merging with general traffic at the internal stop line (Eynsham Road junction). The bus lane then restarts approximately 85 metres past the junction.
    - **The bus lane then continues (with a brief gap at the access junction to the Worton Composting and Green Waste Recycling access) until the Duke's Cut Bridge**, with a bus gate provided at the bridge to allow buses priority as they join the general traffic lane.

- **The westbound bus lane** will be provided in two sections:
    - The first section starts a short distance west of the A40/Horsemere Lane junction and ends approximately 150m before the A40/Eynsham Road signalised junction, with a bus gate provided to allow buses priority as they join the general traffic lane.
    - The second section starts approximately 300 metres west of the A40/Cassington Road signalised junction continuing for approximately 550 metres, before ending with a bus gate provided to allow buses priority as they join the general traffic lane.

4. Upgraded 3m wide unsegregated footway/cycleway to the north of the A40 carriageway

The footway/cycleway will run over the same extents as the eastbound bus lane thereby ensuring that a continuous cycle route is retained between Witney, Eynsham Park & Ride and Oxford. This will include the proposed widening of Cassington New Bridge (over the River Evenlode to the west of Cassington Signals) and a new footbridge at Cassington Halt Bridge (over the private quarry access road to the east of Horsemere Lane) to maintain the width of the new shared footway/cycleway along the northern carriageway.

5. Retention of the existing footpath on the southern side of the A40 providing a route from Eynsham to Oxford.

6. Reduction in the speed limit from 60mph to 50mph along the scheme extents

7. A40 crossing proposals are likely to include:

- **West of Cuckoo Lane ('Toucan' - pedestrian and cycle crossing):** A new signalised staggered pedestrian/cycle crossing is proposed approximately 50 metres to the west of the A40/Cuckoo Lane T-junction, providing an improved pedestrian and cycle connection between the Park & Ride and Eynsham.
- **A40/ Witney Road crossing:** Crossing retained as per existing junction. The crossing provides a route to/from Eynsham Village and the new proposed bus stop on the A40 (north) in this location.
- **Near Esso Petrol Station ('Pegasus' crossing i.e. a signalised pedestrian, cycle, equine crossing to replace the existing informal crossing):** approximately 30 metres west of the existing crossing. The Pegasus crossing will enable equestrians to ride their horses across the road alongside pedestrians, providing good connectivity to existing bridleways. The existing refuge island will be removed and the bus lane will terminate on the approach to the Pegasus crossing allowing access to the petrol station. The crossing will be signalised, providing a 4 metre wide pedestrian crossing and a 5 metre wide crossing for equestrians. The crossing provides a route to/from Eynsham Village and the new proposed bus stop on the A40 (north) in this location. This Pegasus crossing also provides connectivity with the bridleway (PRoW 206/31) that is dissected by the A40 near this location.
- **Between Esso Petrol Station and Eynsham Roundabout ('Pegasus' crossing)**: The new crossing will be located approximately 30 metres west of the existing informal crossing location, the latter of which will be removed. The crossing will be signalised, providing a 4m wide pedestrian and cycle crossing and a 5 metre wide crossing for equestrian users. The crossing provides a route to/from Eynsham Village and the new proposed bus stop on the A40 (north) in this location. This Pegasus crossing also provides connectivity with the bridleway(PRoW 206/9) that is dissected by the A40 near this location.

- **Eynsham Roundabout:** Will broadly remain the same with minor modifications. The existing pedestrian/cycle (non-signalised) informal crossing on Lower Road at Eynsham roundabout will be retained but improved, with the crossing widened to 5 metres.
- **Between Eynsham Roundabout and Cassington signals:** A new pedestrian crossing between Eynsham Roundabout and Cassington Signals is proposed. The crossing will be an uncontrolled crossing with a traffic island.
- **A40/ Cassington Road:** The existing pedestrian crossing will be replaced with a staggered Toucan crossing. The Cassington Road entry to the junction will be moved slightly to the west, allowing the conversion of the existing traffic island into a pedestrian refuge island.
- **A40/ Eynsham Road:** The left turn from the A40 to Eynsham Road kerb line has been realigned and a pedestrian refuge island is proposed.
- **Cassington Halt Bridge to the westbound layby**: It is proposed to install a new pedestrian crossing between Cassington Halt Bridge and the existing westbound layby. The crossing will be an uncontrolled crossing with a traffic island.

8. Junction reconfiguration proposals are likely to include:

- **A40/Cuckoo Lane priority junction:** will be reconfigured to improve safety at the junction as well as to accommodate the bus lane. Rather than the triangular island arrangement, the Cuckoo Lane approach will become a standard T-junction with a flared approach to the junction. The eastbound bus lane will stop 30 metres before the junction, allowing vehicles to turn left into Cuckoo Lane. The right turn from the A40 westbound into Cuckoo Lane will remain segregated with a ghost island, although stacking capacity will be increased by 30 metres.
- **A40/Witney Road signalised T-junction:** will remain largely as existing but with the northern kerb line realigned to accommodate the bus lane.
- **Esso petrol station entry/egress:** will remain broadly the same as existing but with a slightly reduced entry/exit radius to accommodate the bus lane. The existing traffic island will also be slightly relocated as a result of accommodating the bus lane.
- **Eynsham Roundabout**: will broadly remain the same with minor modifications.
    - **A40 western arm:** The eastbound bus lane on will stop approximately 50 metres before the roundabout, which will effectively increase the flare on the A40 approach to the junction.
    - **Lower Road:** This approach will be slightly widened, with an increase to the entry radius.
    - The existing pedestrian crossing will be retained, however, the crossing will be widened to 5 metres.
    - **A40 eastern arm:** There will be an increase in the effective flare on the westbound approach to the junction. In addition, the A40 westbound exit will be widened, with a minor change in the radius.

- **A40/Cassington Road signalised T-junction** (which forms part of Cassington Signals) will be redesigned to incorporate the bus lane:
    - The western arm (A40 eastbound) will be widened and will accommodate the bus lane as well as the straight ahead and right turn lanes into Cassington road.
    - The existing traffic islands will be relocated accordingly.
    - The northern traffic island adjacent to the bus lane will be lengthened, giving priority to buses.
    - The existing pedestrian crossing will be replaced with a staggered toucan crossing.
    - The existing westbound bus stop will be relocated further to the west, allowing widening of the carriageway.
    - The Cassington Road entry to the junction will be realigned slightly to the west, allowing the conversion of the existing traffic island into a pedestrian refuge island.
- **A40/Eynsham Road signalised T-junction** (which forms part of the Cassington Signal) will be upgraded to reflect improvements at the A40/Cassington Road T-junction. On the A40 western approach (eastbound) three lanes are proposed; two lanes for ahead movements and one lane for the right turn into Eynsham Road. The left turn from the A40 to Eynsham Road kerb line has been realigned and a pedestrian refuge island is proposed, and the carriageway will be slightly widened.
- **Horsemere Lane:** Closure to traffic has been made at the request of the Parish Council. Any potential changes would still retain access for equestrians, pedestrians and cyclists.

9. Bus stop provision

Two new sets of bus stops will be provided on the A40 at Eynsham for local people to access the improved bus services. These are supported by the provision of two new signalised crossings. The bus stops are located:

- East of Witney Road and west of the Esso Petrol Station.
- West of Eynsham Roundabout.

The existing bus stop on the A40 (south) by The Evenlode will be retained. However, the bus stop on the A40 (north) will not be retained at this location given the proximity of the Park & Ride site.

7.2 A40 Smart Corridor, Phase 2 of A40 Strategy

The A40 longer term strategy transport package (now known as A40 Smart Corridor) was approved by OCC Cabinet in May 2016. OCC is currently bidding in the second round of the Ministry of Housing, Communities and Local Government (MHCLG) Housing Infrastructure Fund (HIF) to finance this scheme which will comprise:

- **A continuous eastbound bus route over the A40 Dukes Cut canal and railway bridges on the approach to Wolvercote.** Resolution of this pinch point would provide a continuous eastbound bus route from Eynsham Park & Ride into Wolvercote roundabout together with **a high quality 3 metre wide shared cycle path** separated from the general traffic lanes.
- **Further sections of the A40 westbound bus lane** to provide quicker return journeys to Eynsham Park & Ride from Oxford and other destinations served by the wider local bus network.

- **Extension of the A40 dual carriageway from Witney to Eynsham Park & Ride** to increase capacity for all modes i.e. including improvements for pedestrians and cyclists, along this heavily trafficked part of the route, thereby providing a quicker and more reliable journey for trips to Eynsham Park and Ride from the east of the site.

OCC submitted the A40 Smart Corridor Business Case to the Housing Infrastructure Fund (HIF) in March 2019. This is now being appraised by the Ministry of Housing, Communities and Local Government (MHCLG), the Department fpr Transport & Homes England. OCC expect to hear the outcome of the submission in late summer 2019.

7.3 B4044 Community Path

The B4044 Community Path to support cycling and walking between Eynsham and Oxford originally comprised an element of the A40 Smart Corridor HIF bid but in the final stages of preparing the business case OCC took the difficult decision to remove the Community Path from the business case. This was due to the need to provide evidence as to how the B4044 Community Path would unlock new homes which would not otherwise be built if it had not been in place. Following assessment, OCC considered that if challenged, it would be difficult to adequately demonstrate that the Community Path was essential to the delivery of housing at Witney and Eynsham (or elsewhere in Vale of White Horse). For this reason, the scheme would not meet the HIF criteria. The B4044 Community Path is still a part of the Strategy for the A40 but OCC proposes to identify internal revenue funding to continue to develop the scheme design along the same timeframes as proposed, as if HIF funding was being sought.

It is anticipated that the B4044 Community Path design will continue to take place during 2019/20 with a key output to ensure the design is cost effective and value for money. Progressing the design now will ensure that a scheme for the B4044 Community Path is ready to submit for future funding opportunities as they arise, where the scheme meets the criteria. By having a 'shovel ready' scheme, funding opportunities that have short time frames can be applied for, which is often the case with external funding sources.

7.4 'Improving the A40': Public Consultation

A public consultation for the detailed design of the A40 Science Transit 2 and A40 Smart Corridor schemes was held between 30th November 2018 and 6th January 2019. The findings from the consultation will feed into the Transport Strategy for the West Eynsham SPD and the Garden Village AAP. A summary of the views of respondents towards the various proposals is provided below.

What best describes your opinion of the following proposals	Like	Do not like	No view	% LIKE (incl. 'No View')	% LIKE (excl. 'No View')
A40 SCIENCE TRANSIT 2 SCHEMES:					
Eynsham Park & Ride	159	212	87	35%	43%
A40 bus lanes (eastbound from Eynsham P&R to Duke's Cut; short westbound sections on approaches to Cassington signals and Eynsham Roundabout)	190	181	87	41%	51%
A40 SMART CORRIDOR:					
A40 dualling (Witney to Eynsham P&R)	245	117	96	53%	68%
Completing westbound bus lane	201	145	112	44%	58%

What best describes your opinion of the following proposals	Like	Do not like	No view	% LIKE (incl. 'No View')	% LIKE (excl. 'No View')
A40 eastbound bus lane (Duke's Cut to Wolvercote Roundabout)	201	132	125	44%	60%
A40 Cycle link to National Cycle Network Route 5 on the Oxford Canal Tow Path	324	22	112	71%	94%
B4044 Community Path form Eynsham to Botley	349	25	84	76%	93%

It can be seen from the Consultation responses that:

- There was significant support for the A40 Smart Corridor cycle scheme proposals with, when those who expressed no view are excluded, over 93% of respondents stating that they 'liked' the cycle link to NCN Route 5, and the proposals for the B4044 Community Path. More respondents had a view on the B4044 Community Path than on the Route 5 link.
- After the cycle lane proposals, the next most favoured scheme was the A40 Smart Corridor dualling proposals form Witney to Eynsham Park & Ride with 68% of respondents who expressed a view stating that they 'liked' this scheme.
- The A40 Smart Corridor bus lane elements (completing the eastbound and westbound bus lanes) were each 'liked' by around 60% of respondents who expressed a view.
- The A40 bus lanes proposed as part of A40 Science Transit 2 were 'liked' by 51% of respondents although it is noted that the bus lanes proposed as part of the A40 Smart Corridor (which were liked by a higher number of respondents) cannot be delivered without the Science Transit 2 bus lane elements.
- With 43% of respondents who expressed a view stating that they did not like the Park & Ride proposals, this was the least popular scheme.

7.5 Improvements at Hanborough Station

In recognition of the increased importance of Hanborough Station, there are proposals for its enhancement as part of a wider upgrade to the Cotswold Line :

Operator Great Western Railway (GWR) has funding of £250,000 for use at Hanborough which comprises a new temporary modular building which will accommodate a ticket office, waiting room and toilet. GWR is also looking to house a small retail outlet in the building to provide refreshments for passengers. GWR has awarded funding of £37,000 from its Customer and Communities Improvement Fund to Hanborough Parish Council so that it can carry out a feasibility study for construction of a new footway/cycleway bridge alongside the existing A4095 road bridge.

A North Cotswold Line Task Force has been created and is developing proposals for a significant investment in improvements to the Cotswold Line, which would enable two trains every hour to Worcester and an increase in the service to Oxford to at least three trains every hour, two of which would continue to London. This would require reinstatement of more double track on the line between North Oxford and Hanborough and additional platforms at the station. There are also proposals to enhance access by all modes to the station, including a permanent station building, new southern entrance and footbridge, and expanded car and cycle parking provision. Land has been reserved as part of the residential development south of the railway for this station expansion. There are aspirations to improve the bus/rail interchange.

WODC has recently commissioned some work regarding station accessibility/master planning to inform a Hanborough Station SPD. Well-designed routes between the station and nearby developments for all modes must be considered from the outset, not only to minimise any increase in vehicular traffic flow though the village but to ensure they provide attractive alternatives to car use. Encouraging use of the station through good design will help justify the significant investment in new rail infrastructure that is required to deliver a transformational change in local rail services.

Appendix 1
Garden Village Issues Paper - Transport

6.67 With any large-scale development it is important to consider the transport and movement implications and this is particularly relevant to the garden village given that it accesses directly onto the A40 and is close to a number of other key routes. One of the key principles outlined earlier is that garden villages should be based on integrated and accessible transport systems, with walking, cycling and public transport designed to be the most attractive forms of local transport

6.68 The AAP has a key role to play in helping to minimise the transport impact of the garden village and can do this by seeking to:

- Reduce the overall need to travel;
- Minimise dependency on the private car;
- Maximise opportunities for 'active travel' including walking, cycling and riding;
- Maximise the use of public transport including bus and rail;
- Capitalise on current and emerging technologies;
- Encourage sustainable/efficient deliveries;
- Ensure effective travel plans for the site are implemented; and
- Identify highway improvements to mitigate the impact of the development

6.69 These issues are explored further below.

Reducing the need to travel

6.70 The garden village presents the opportunity to reduce the need to travel by encompassing a wide range of different uses within it so that if someone living there is able to easily access most of the services and facilities they need on a day to day basis, they won't necessarily need to travel further afield.

6.71 We have already touched on a number of ideas such as mixed-use 'hubs' or 'clusters' of different uses and the provision of local employment and commercial opportunities as well as a strong emphasis on home-working and flexible live-work space.

CONSULTATION QUESTION 16: Reducing the need to travel

16a) Are there other ways in which the AAP could help reduce the overall need to travel?

Minimising dependency on the private car

6.72 A key aim of the AAP will be to reduce dependency on the private car. Whilst we cannot hope to eliminate the use of the private car, we can help to reduce car use in a number of ways.

6.73 One of the main ways in which the AAP can have a positive effect is in relation to car parking. The AAP could for example potentially include within it a specific car parking strategy which helps to support and encourage the use of more sustainable forms of transport (active travel and public transport) and achieve modal shift away from the car.

6.74 The car parking strategy could address a number of issues such as the potential need for controlled parking zones (CPZs) and parking restrictions in areas where parking could potentially be displaced. It could also be used to set specific and ambitious car (and cycle) parking standards having regard to any modal shift targets identified.

6.75 In addition to the use of a robust car parking strategy and standards, the garden village presents an excellent opportunity to create a successful 'car club'. Car clubs are already successfully operating in a number of (primarily urban) areas and essentially provide members with access to hire cars at relatively short notice and for flexible periods of time (i.e. as short as an hour, up to a day, weekend or longer). They provide the convenience of owning a car without the additional problems of servicing, maintenance etc. and in particular can reduce the need for multiple car ownership in households.

CONSULTATION QUESTION 17: Reducing dependency on the private car

17a) Should the AAP include within it a specific car parking strategy addressing issues such as parking management, restrictions and standards?

17b) Do you think that the garden village should be based on more robust car (and cycle) parking standards than standard residential development to help promote a stronger degree of 'modal shift' away from the use of the private car?

17c) Do you support the idea of establishing a 'car-club' at the garden village to allow people who do not want to own a car (or a second car) to access one whenever they need to?

17d) Are there any other measures which could be introduced through the AAP to help to reduce dependency on the private car?

Maximising active travel (walking, cycling and horse riding)

6.76 Active travel means making journeys by physically active means such as walking, cycling and horse riding. The benefits of active travel are well-documented and include improvements to physical and mental health, quality of life, the environment and productivity as well as less reliance on vehicular travel.

6.77 As the garden village is taken forward through the AAP it will be essential for active travel to be promoted and facilitated as much as possible. This is consistent with the TCPA garden village principles outlined earlier which emphasise the need to ensure that walking, cycling and public transport are designed to be the most attractive forms of local transport. It is also consistent with the submission draft Eynsham Neighbourhood Plan which seeks to ensure that all developments include designated pedestrian and cycle routes for direct, secure and safe access at all times of the day. Oxfordshire County Council policy requires the layout and design of new developments to proactively encourage walking and cycling, especially for local trips, and allow developments to be served by frequent, reliable and efficient public transport.

6.78 There are a number of ways in which the AAP can promote active travel. As a starting point the AAP could for example place a strong emphasis on the concept of 'walkable neighbourhoods'. As noted in the Neighbourhood Plan, Eynsham has a compact and walkable form and this is one of its key strengths because people are able to access a range of services and facilities conveniently and safely without using a car.

6.79 This element of compact 'walkability' is something the AAP could emphasise the need for in the new garden village through for example, ensuring any key points of focus such schools, mixed-use 'hubs' or other places of work are within easy walking distance of new homes. Also by ensuring that the design and layout of streets and spaces are attractive to pedestrians, cyclists and other forms of non-car movement as well as being compatible with those who do use a car e.g. through the use of shared-space. The use of robust cycle parking standards and effective travel planning as discussed earlier will also help in this regard.

6.80 A key element to achieving modal shift away from the car and towards active travel is the provision of dedicated, safe and convenient routes. As we outlined earlier, the garden village site already has an extensive network of public rights of way running across and around it. The AAP has an important role to play in identifying existing key routes and desire lines and requiring the necessary upgrades and improvements to make them more attractive and better connected with the surrounding network of rights of way. The Eynsham Neighbourhood Plan emphasises that any existing public rights of way should be retained and incorporated into the landscape design of the development and connective and green infrastructure, only being re-routed where appropriate and unavoidable.

6.81 Particular opportunities presented by the garden village include improvements to the existing network of rights of way to provide better access to Barnard Gate, Freeland, Long Hanborough and Cassington as well as into Eynsham itself. There is also likely to be the potential to consider improvements to the existing cycle-path along the A40 for trips both east and west. Trips to Oxford may also be attractive to cyclists, and provision of new cycle routes from the Garden Village into the west of Oxford present a further opportunity for mode shift.

6.82 In addition to improving existing routes, the AAP also has a role to play in identifying potential new or extended routes particularly to enable active travel to key destinations such as any new schools, bus stops, employment area/s and community uses. A key consideration for example is the provision of a safe pedestrian and cycle link along Lower Road to Hanborough Station. At present this is a busy, fast road which is less than ideal for walking or cycling. However, with appropriate improvements it could become an attractive and well-used route.

6.83 A key issue will be the ability of people living and working in the garden village to walk, cycle or ride to Eynsham and vice versa. At present there are just two designated crossing points on the A40, a signal controlled crossing at the junction with Witney Road and a non-signal controlled crossing near the petrol filling station which connects the public right of way by the petrol filling station into Eynsham via Spareacre Lane. There is another public right of way further east that runs from the garden village site across the A40 and into Hanborough Road but there is no formal crossing point.

6.84 The County Council's proposed A40 Science Transit scheme is likely to include two new pedestrian crossings on the A40, to enable safe crossing to access the enhanced bus services using the proposed eastbound bus lane. However, the stretch of A40 corridor fronting the Garden Village will require a comprehensive review in light of the potential new access points, desire lines and increased demand the Garden Village will generate.

6.85 A key aim of the draft Neighbourhood Plan is to ensure the provision of safe crossing places of the A40 for students and other residents accessing services in Eynsham. The plan identifies a number of potential improvements including a new crossing point for pedestrians and cyclists at the cut-through from Hanborough Road.

CONSULTATION QUESTION 18: Active travel

18a) Do you agree that the garden village should be based on the concept of well-connected, 'walkable' neighbourhoods?

18b) In considering the opportunities to improve or extend existing public rights of way in and around the site, are there any specific routes that should be given priority (e.g. connections to surrounding villages, into Eynsham, along the A40)?

18c) Do you have any specific ideas for new routes that should be provided to promote active travel? Do you support the idea of a new pedestrian/cycle link to Hanborough Station along Lower Road?

18d) In terms of connections across the A40 are there particular points that should be prioritised for new or improved crossing points? Do you have a view on the type of crossing that should be provided (e.g. bridge, underpass, surface-level)?

18e) Are there are any other factors we have not mentioned that the AAP should focus on to promote more 'active travel'?

Public transport including bus and rail

6.86 The Eynsham area is relatively well-served by public transport. In terms of bus services, two premium services are in operation including the S1 which runs along the A40 from Carterton and Witney and then through Eynsham and onto Oxford through Botley. The S2 service also runs from Carterton and Witney through to Oxford along the A40. There are also a number of other local bus services.

6.87 With regard to rail services, Hanborough Station is on the Cotswold line and has seen significant passenger growth in recent years supported by a number of improvements including additional car parking. There is potential for further growth with the introduction of an hourly service in December 2018. New trains will bring increased capacity with additional seating and will also achieve faster journey times, with some services from Hanborough reaching London Paddington in 63 minutes.

6.88 The availability of good levels of public transport locally provides a number of opportunities for the garden village to achieve strong modal shift away from the private car and towards bus and rail. The AAP has a key role to play in identifying and securing these opportunities through policy.

6.89 With regard to bus services, the County Council are currently progressing design work for a new 1,000 space park and ride site just to the west of Cuckoo Lane, within the boundary of the garden village site. This proposal forms part of the A40 Science Transit project and will be delivered along with eastbound bus priority towards Oxford as part of a £35m package of funding awarded under the Government's Local Growth Fund. The scheme objectives are to provide a congestion free route for public transport on the A40 eastbound approach to Oxford; Encourage people from using cars to public transport; and improve journey times and making them more reliable for public transport along the A40.

6.90 The recent announcement on the Government's Housing and Infrastructure Fund (HIF) also opens the door for potential additional funding of £145m which would enable further elements of the A40 strategy to be delivered. The strategy objectives are to improve travel times and journey reliability along the A40 corridor, particularly between Witney and Oxford; stimulate economic growth, in line with the Oxfordshire Strategic Economic Plan; improve safety and reduce environmental impacts such as air pollution and noise along the A40 corridor. The bid to HIF is to include the westbound bus priority for return trips from Oxford to the proposed park and ride, together with a number of other improvements including additional dualling between Eynsham and Witney.

6.91 The proposed park and ride site could potentially form a key transport 'hub' within the new garden village acting as a point of focus for bus services operating within this area. The park and ride itself could also be supported by the delivery of other complementary uses such as the type of 'click and collect'/parcel drop facilities and other commercial services such as small-scale retail, dry-cleaning etc. to maximise the opportunities for 'linked-trips'.

6.92 The provision of a new park and ride site within the garden village creates a number of opportunities including a potential new bus service directly serving the garden village site (i.e. running through it and onto Lower Road).

6.93 To further increase the attractiveness of bus services in this area, the AAP presents an opportunity to consider the availability and quality of waiting facilities including those along the A40 as well as the frequency of existing services. There is for example a useful service from Witney to the John Radcliffe Hospital in Oxford (S7) running along the A40 immediately south of the garden village however it is currently infrequent with only 5 buses per day during the week and no Saturday or Sunday service. It may be possible therefore to increase the frequency of this service and/or other services as a result of the garden village coming forward.

6.94 Further work will be required to understand the most effective routing and operation of bus services in this area but it is clear that there are a number of positive opportunities for enhancement. In further considering future arrangements, regard will need to be had to the proposed West Eynsham Strategic Development Area (SDA) and the potential implications of the proposed western spine road through that development.

6.95 With regard to rail provision although the garden village is not directly served by rail it is close to Hanborough Station which is identified in the County Council's Local Transport Plan (LTP4) as a potential strategic transport hub to help reduce congestion on the A40 as part of an overall package of public transport measures. An important consideration for the garden village as we outlined earlier will be to consider the potential for an effective pedestrian and cycle link along Lower Road.

6.96 Stagecoach, the main bus operator has confirmed that they do not consider a commercial bus service to Hanborough Station to be feasible but this will be further explored as part of the AAP process.

CONSULTATION QUESTION 19:
Public transport (bus and rail)

19a) Do you have any thoughts on the proposed park and ride site west of Cuckoo Lane acting as a comprehensive 'transport hub' supported by a range of complementary uses such as 'click and collect'?

19b) What new bus services if any do you think should be facilitated by the AAP/garden village?

19c) How can the AAP help to improve the attractiveness of existing bus services?

19d) Apart from the potential provision of a new pedestrian/cycle link to Hanborough Station along Lower Road, are there any other ways in which greater use of Hanborough Station could be encouraged?

19e) Are there are any other factors we have not mentioned that the AAP should focus on to promote increased use of public transport?

Making use of emerging technologies

6.97 As the garden village will take a number of years to build out, it presents an opportunity to consider how new and emerging technology can be used to help with transport and movement in and around the site. This could include relatively simple elements including electric vehicle charging points provided around the site (including at the park and ride). In Oxford, a trial scheme is being set up to install 'pop-up' on-street electric vehicle charging points (which retreat underground when not in use). Similarly, if a car-club were to be set up as outlined earlier it could include a proportion of electric vehicles with charging points made available as appropriate.

6.98 At the more radical end of the spectrum, some larger urban areas are becoming based on 'smart city' principles and use ICT and various physical devices connected to the network to optimise the efficiency of operations and services including traffic and transport. A subset of this is the use of intelligent transport systems (ITS) which aim to integrate different transport modes to promote a more efficient and sustainable transport system.

6.99 Whilst these types of scheme are generally being rolled out in larger urban areas, there may be some elements that could be encouraged on a smaller-scale through the AAP and we would welcome your thoughts on this.

CONSULTATION QUESTION 20:
Making more use of technology

20a) Do you agree that the AAP should explore the use of new technology to assist with 'smart travel'?

20b) Do you have any specific suggestions as to how new technologies could be usefully employed?

Encouraging sustainable deliveries

6.100 As well as addressing trips to and from the site by residents, visitors and those employed within the garden village, the AAP could emphasise the need for sustainable deliveries both to residences and the commercial uses on site. This could be facilitated through the use of initiatives such as parcel drop boxes, , retail click and collect etc. These could be integrated with other uses such as the proposed park and ride so that someone could return to the park and ride site to collect their car and at the same time pick up a parcel that has been delivered to a secure facility there.

6.101 To further emphasise the need for sustainable deliveries, the AAP could stipulate the use of Delivery and Servicing Plans (DSPs) which are of particular relevance to commercial uses and have a number of benefits including the pro-active management of deliveries to reduce the number of delivery and servicing trips, the timing of deliveries e.g. avoiding peak hours etc.

Ensuring effective travel planning

6.102 The AAP could also place a strong emphasis on the use of robust travel plans for both residential and commercial elements. This would be consistent with the NPPF which requires a travel plan for all developments which generate significant amounts of transport movement such as the garden village. A travel plan is essentially a long term management strategy which encourages sustainable travel. It sets out transport impacts, establishes targets and identifies a package of measures to encourage sustainable travel. It can be applied to residential properties, businesses, schools and other uses.

6.103 In addition to the use of travel plans, the AAP could stipulate the use of Construction Logistics Plans (CLPs). These focus specifically on construction supply chains and how their impact on the road network can be reduced. The use of such a plan would help to reduce the impact of traffic during the construction phase and would therefore be particularly applicable to the garden village which will be built over a number of years.

CONSULTATION QUESTION 21: Sustainable deliveries and travel planning

21a) In terms of reducing the need to travel, do you agree that the AAP should emphasise the use of sustainable deliveries (e.g. use of parcel drop-boxes, delivery and servicing plans (DSPs) etc.)

21b) Do you support the use of robust travel planning including the potential use of construction logistics plans (CLPs)?

Highway improvements

6.104 The A40 already operates above capacity particularly during the morning and evening peaks and other routes in the area also suffer as a result of traffic being displaced onto them including the A4095/A44 and the B4449/B4044.

6.105 A number of highway improvements to the A40 have already been made in recent years with further improvements either currently underway (e.g. Witney Downs Road/A40 junction) or proposed to be taken forward over the next few years including the provision of the new park and ride and bus priority measures along the A40 with a number of junction improvements including at Eynsham and Cassington.

6.106 The objectives for the A40 strategy are to improve travel times and journey reliability along the A40 corridor, particularly between Witney and Oxford; stimulate economic growth, in line with the Oxfordshire Strategic Economic Plan; improve safety and reduce environmental impacts such as air pollution and noise along the A40 corridor.

6.107 Subject to funding, the County Council's preferred long-term strategy for the A40 also includes additional dualling of the A40 between Witney and Eynsham, further bus priority measures and consideration of possible measures to address a number of 'pinch-points' including the Dukes Cut bridge.

6.108 The garden village presents an opportunity to consider these and other potential highway improvements so that the new homes, jobs and other supporting services and facilities at the garden village can be accommodated.

6.109 Further evidence will be prepared as part of the AAP process to determine in more detail what those improvements should entail but some early ideas are outlined below and we would welcome your thoughts on these .

6.110 In terms of the A40 itself, initial thoughts are that two new roundabouts would be created. The westernmost roundabout could potentially provide access to both the West Eynsham SDA south of the A40 and also to the garden village north of the A40. This would be accompanied by a second roundabout to the east which would allow access to the proposed park and ride site, the garden village and potentially into the West Eynsham SDA to the south of the A40 to provide two points of access into that development from the A40 (subject to the operational requirements of the park and ride).

6.111 A new roundabout in this location would also then provide the opportunity to consider the existing junction onto the A40 from Cuckoo Lane and whether this should remain, be altered or even closed to minimise the number of separate points of access onto the A40 once the garden village is occupied.

6.112 A key objective of the transport strategy for the A40 is to improve journey times and reliability along that corridor. The draft Eynsham Neighbourhood Plan also emphasises the importance of this and suggests that existing junctions should be rationalised so that the net number of junctions does not increase or slip-roads may be used to achieve the same end[37].

6.113 In addition to the potential provision of two new roundabouts on the A40, consideration will need to be given to potential improvements to the existing roundabout at the junction of Lower Road with the A40. This is also highlighted in the Eynsham Neighbourhood Plan which states that access to a northern development from the existing Eynsham roundabout via an improved and realigned Lower Road should be sought to minimise congestion and improve safety on this section of Lower Road[38].

6.114 The District Council's initial expression of interest in 2016 indicated a new 'spine' road running through the garden village connecting Cuckoo Lane with Lower Road. Clearly this would need to be considered in the context of any changes/closures to the Cuckoo Lane junction with the A40 but we would welcome initial views on the principle of a new road connection across the site such as this.

CONSULTATION QUESTION 22: Highway improvements

22a) Do you support in principle the provision two new roundabouts on the A40? What, if any concerns would you have about this?

22b) Should each roundabout facilitate access to both the garden village and the West Eynsham SDA?

22c) Do you agree with the draft Eynsham Neighbourhood Plan that consideration should be given to the rationalisation of existing junctions (for example the junction of Cuckoo Lane onto the A40)?

22d) Do you agree with the draft Eynsham Neighbourhood Plan that improvements should be made to the existing roundabout at the junction of Lower Road and the A40?

22e) Do you support 'in principle' the provision of a connecting 'spine' road running through the garden village from Cuckoo Lane to Lower Road?

[37] Submission draft Eynsham Neighbourhood Plan paragraph 16.4
[38] Submission draft Eynsham Neighbourhood Plan paragraph 16.5