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A40 Corridor Improvements

A40 Dualling

Option Assessment Report (OAR)

Oxfordshire County Council

March 2021

Quality information

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1.1 Background

1.1.1 The A40 corridor in the county of Oxfordshire is a single carriageway A road connecting towns and villages in the district, such as including Witney and Eynsham, with the historic city of Oxford (Figure 1-1). The A40 serves a much wider purpose of connecting Oxfordshire with neighbouring counties and regions including Cheltenham, Gloucester and South Wales to the west, and Buckinghamshire, Greater London and the M40 to the east. In the west of the county, the A40 is comprised of a single carriageway road. The section between Witney and Oxford is currently operating above capacity, with daily congestion issues affecting all road users.

1.1.2 Increased commuting into the City of Oxford, and a reliance on private vehicles for travel has led to the worsening levels of congestion on the highway network across much of Oxfordshire. One reason for increased commuting into Oxford from surrounding districts and counties is the high housing costs with Oxford among the most expensive places in the country (see section 3.3).

1.1.3 These issues are considered significant barriers to economic growth and prosperity in the county and would be further exacerbated by the additional traffic generated by planned development (see section 1.1.4), dictating the need for intervention.

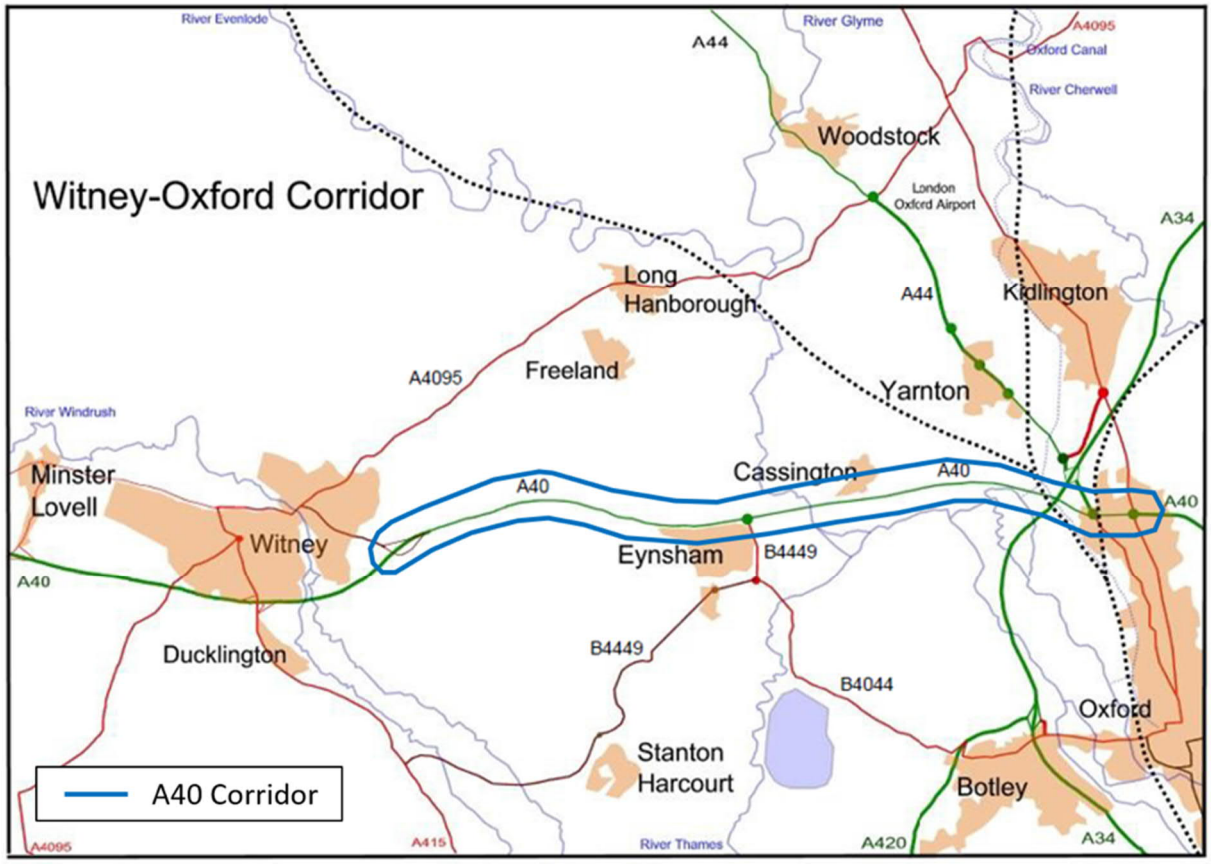


Figure 1-1. A40 Corridor
Source: A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017)

1.1.4 Oxfordshire is a prosperous and vibrant county, combining a successful, thriving economy with a high-quality environment. Oxfordshire has committed to the delivery of 100,000 new homes between 2011 and 2031 as identified within the 2014 countywide Strategic Housing Market Assessment and the five districts' Local Plans.

1.1.5 The West Oxfordshire District Council Local Plan 2031, which covers the section of the A40 between Witney and the outskirts of Oxford, was adopted in September 2018 and commits to delivering West Oxfordshire's housing need (13,200 homes in the period 2011-2031), as well as assisting Oxford City in meeting its unmet housing need (2,750 homes in the period 2021-2031), totalling at least 15,950 new homes in the West Oxfordshire District up to 2031.

Promoting Use of Sustainable Transport on the A40 Corridor

1.1.6 The Oxfordshire Local Transport Plan 4 (LTP4), titled Connecting Oxfordshire, was adopted by Oxfordshire County Council (OCC) in 2015 and updated in 2016. It was developed with three over-arching transport goals in mind:

i. To support jobs and housing growth and economic vitality;

ii. To reduce emissions, enhance air quality and support the transition to a low carbon economy; and

iii. To protect and enhance Oxfordshire's environment and improve quality of life (including public health, safety and individual wellbeing).

1.1.7 The overall strategy in the Local Transport Plan 4 to 2031 acknowledges that predicting and providing fully for increased demand for road travel by car and freight vehicles in the form of highway capacity improvements is neither affordable nor desirable from an environmental or economic perspective.

1.1.8 The plan states the need to make the best use of existing capacity. Journeys made by low-occupancy private vehicles must reduce and make up a smaller proportion of transport mileage in the future and that more journeys are made by means of transport that take up less road capacity, taking advantage of smarter means of travel, and fully accounting for the potential of any additional road capacity to generate additional car traffic.

1.1.9 A Baseline Statement for the OCC A40 Witney-Oxford Corridor Route Strategy was prepared in September 2014. It identified that the A40 has long standing issues of congestion and leading to extended journey times and high journey unreliability (see section 3.3). The problems and challenges for the Witney-Oxford corridor were summarised as:

- highway links which are currently operating at or above capacity for extended periods of the day with journey speeds as low as 10mph in the am peak and unreliable and unpredictable journey times;
- junctions with capacity constraint issues on at least one arm;
- buses carrying large numbers of trips on generally congested routes;
- an expected large increase in demand on an already congested and capacity constrained route subject to worsening delays in both directions; and
- commercial and residential development focused on areas where the highway network is already under pressure.

1.1.10 There are few alternative means of travel from this part of West Oxfordshire: the alternative road routes also suffer from heavy congestion; there is no convenient rail or other fixed link connection; buses have no alternative but to use the congested roads (such as A40 between Witney and Oxford).

1.1.11 In informing the development of an A40 Corridor Strategy a range of potential options were identified as potential improvement solutions including:

- Park and Ride
- Bus lanes
- Tidal Flow bus lane
- Rail line re-opening
- Guided busways and Trams
- Non-conventional rapid transit (people movers/automatic light rail/monorail)
- Dual Carriageway
- Tidal Flow lanes

1.1.12 Through 2015 and 2016 an assessment evaluating alternative strategies for the corridor was undertaken followed by public consultation.

1.1.13 In May 2016 the OCC adopted a road-based improvement strategy as the most viable, affordable alternative that could be delivered within a relatively short timescale. The A40 corridor strategy which seeks to encourage greater use of public transport and cycling for trips between West Oxfordshire and Oxford includes section of road dualling, the provision of a new Park and Ride site, fully-segregated bus lanes between Eynsham and Oxford Ring Road and improved cycle route provision from Witney along the A40 to Oxford.

A40 Corridor Improvement Programme

1.1.14 Funding has been secured from government to deliver a number of projects that will deliver the A40 strategy and which form the A40 Corridor Improvement Programme:

- **(1) A40 Science Transit 2 (A40ST2) scheme**: This scheme is to be funded from the Department for Transport (DfT) Local Growth Fund (LGF):
    - A new 850 space Park and Ride site in Eynsham, and associated highway improvements including junction improvements[1];

      A full eastbound (towards Oxford) bus lane from the Park and Ride to Duke's Cut; and some short sections of westbound bus lane from the Park and Ride to Duke's Cut.
- **(2) A40 Smart Corridor schemes**: Funding has also more recently been secured from Homes England's Housing Infrastructure Fund (HIF) for three further schemes that will complement the ST2 scheme:
    - An extension of the A40 dual carriageway between Witney and Eynsham;
    - A full westbound bus priority lane from Duke's Cut to the Eynsham Park and Ride site; and
    - A40 capacity and connectivity improvements at Duke's Cut canal and railway bridges that will widen the existing A40 bridges over the railway and canals and/or provide new pedestrian/cycle bridges adjacent to these existing A40 bridges. These works will create space for a new eastbound bus lane and an improved cycleway along this section of the A40. It further includes a cycleway link between the A40 and the National Cycle Network (NCN) 5.

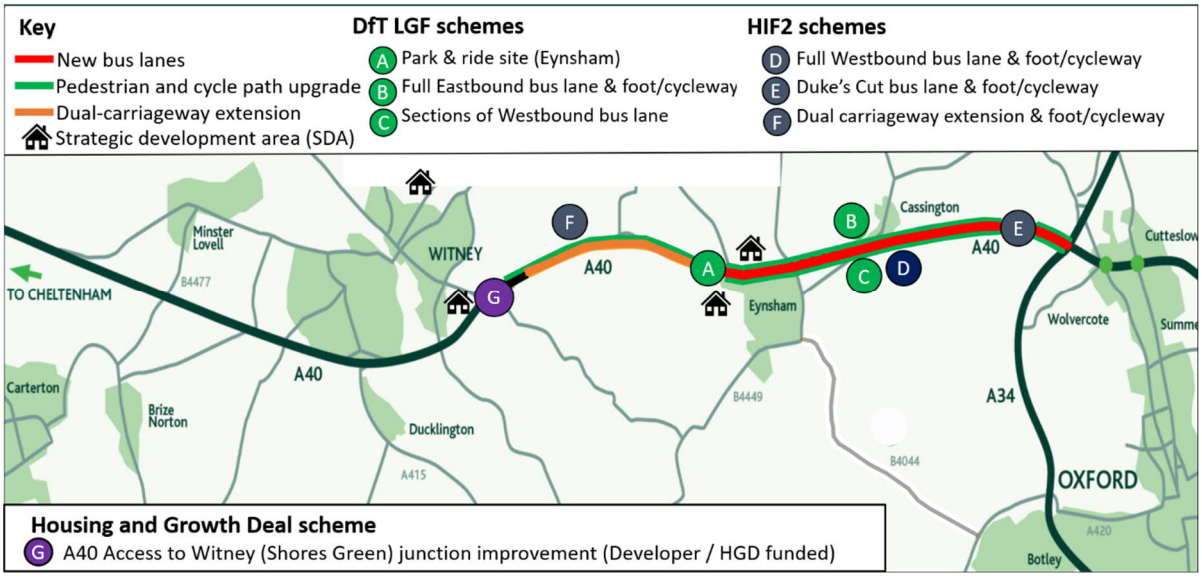


Figure 1-2. A40 Corridor Schemes

Source: Adapted from A40ST2; Oxfordshire CC - © Crown copyright and database right 2020

1.1.15 The A40 Smart Corridor scheme was originally envisioned to be delivered as a second phase of works after the completion of A40ST2. However, following the award of the HIF funding OCC is now proposing to combine elements of the ST2 and Smart Corridor Schemes. This will ensure scheme benefits are maximised; deliver cost and programme efficiencies and minimise disruption during construction.

1.1.16 Figure 1-3 shows the evolution of the A40 Corridor Strategy and Schemes. A key scheme within the A40 corridor improvement programme is the A40 Dualling scheme, consisting of the following elements:

- Widening the A40 to two lanes in each direction, separated by a central reservation, between the Hill Farm Access and Eynsham Park & Ride;
- Significant alterations to junctions along the route;
- Enhancements to the current shared footway and cycleway north of the A40 carriageway; and
- Measures to reduce impact on the local environment
- Provision of revised property access arrangements to enhance safety

[1] See Appendix A for further information on the proposed Eynsham Park and Ride

1.1.17 The A40 Dualling scheme is likely to be implemented in parallel with the other A40 corridor schemes set out above. As part of the package of schemes coming forward, the A40 Dualling scheme will promote use of the sustainable transport coming forward. For example, it will provide fast and easy access to the park and ride, help maintain bus journey time reliability along the A40 and enhance facilities for cyclists between Witney and Eynsham.

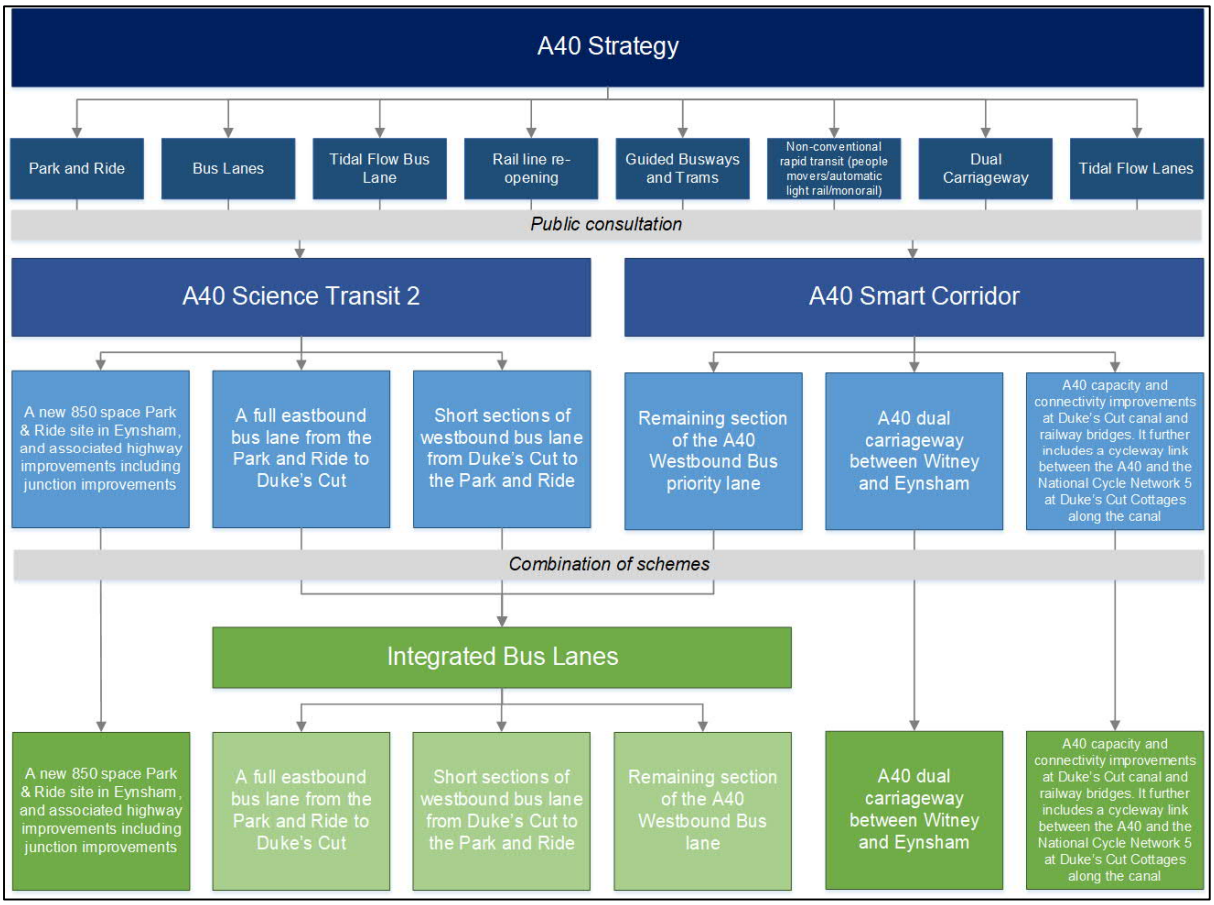


Figure 1-3 A40 Strategy and Scheme Evolution

1.2 Scheme Development

1.2.1 AECOM has been commissioned by Oxfordshire County Council (OCC) to carry out an optioneering exercise as part of the feasibility design to deliver the A40 Dualling scheme and recommend a preferred option to take forward into preliminary design.

1.2.2 In addition, two further optioneering exercises have been commissioned for following the A40 Smart Corridor schemes:

- The Integrated Bus Lanes scheme; and
- Capacity and connectivity improvements at Duke's Cut Bridges.

1.2.3 These optioneering exercises will be presented as three Option Assessment Reports (OARs). These reports will include option development and sifting in accordance with Department for Transport (DfT) Early Assessment and Sifting Tool (EAST) Guidance.

1.2.4 The Park and Ride scheme will be delivered in parallel with the other A40 corridor schemes.

1.2.5 The impact of COVID-19 includes uncertainty in travel demand, public transport usage, active travel mode share and others. Some of the impacts are likely to be short term but others may alter the overall travel pattern over the long term. To account for these uncertainties relevant/recent COVID-19 related policies and literature have been reviewed briefly and their relevance considered to the A40 schemes, such as the DfT's Gear Change: A bold vision for cycling and walking report (2020)[2] and its implications on schemes design.

1.3 Report Purpose

1.3.1 This Option Assessment Report describes the option development process of the A40 Dualling scheme, setting out the decision-making process that was used to reach the shortlisted options to be taken forward to public consultation and for further assessment.

1.3.2 This report sets out the study context; provides details of the adopted approach; discusses current and future conditions, and objectives for the study; provides details of the long list of options to address issues on the A40 corridor; sets out the criteria for the initial sifting of the long list; and summarises the results of the initial sifting (which will be updated over time based on workshops, consideration of stakeholder views, and updated modelling).

1.4 Report Structure

1.4.1 This Option Assessment Report follows the DfT Transport Appraisal Guidance (TAG), as illustrated in DfT's Transport Appraisal Process (TAP)[3] (Figure 1-4 . It provides a summary of steps one to six in Stage 1 of the appraisal process – Option Development – including the review and summary of the work to date.

[2] DfT (2020). https://www.gov.uk/government/publications/cycling-and-walking-plan-for-england
[3] Department for Transport (2018) Transport Analysis Guidance: The Transport Appraisal Process. https://www.gov.uk/government/publications/webtag-transport-appraisal-process-may-2018

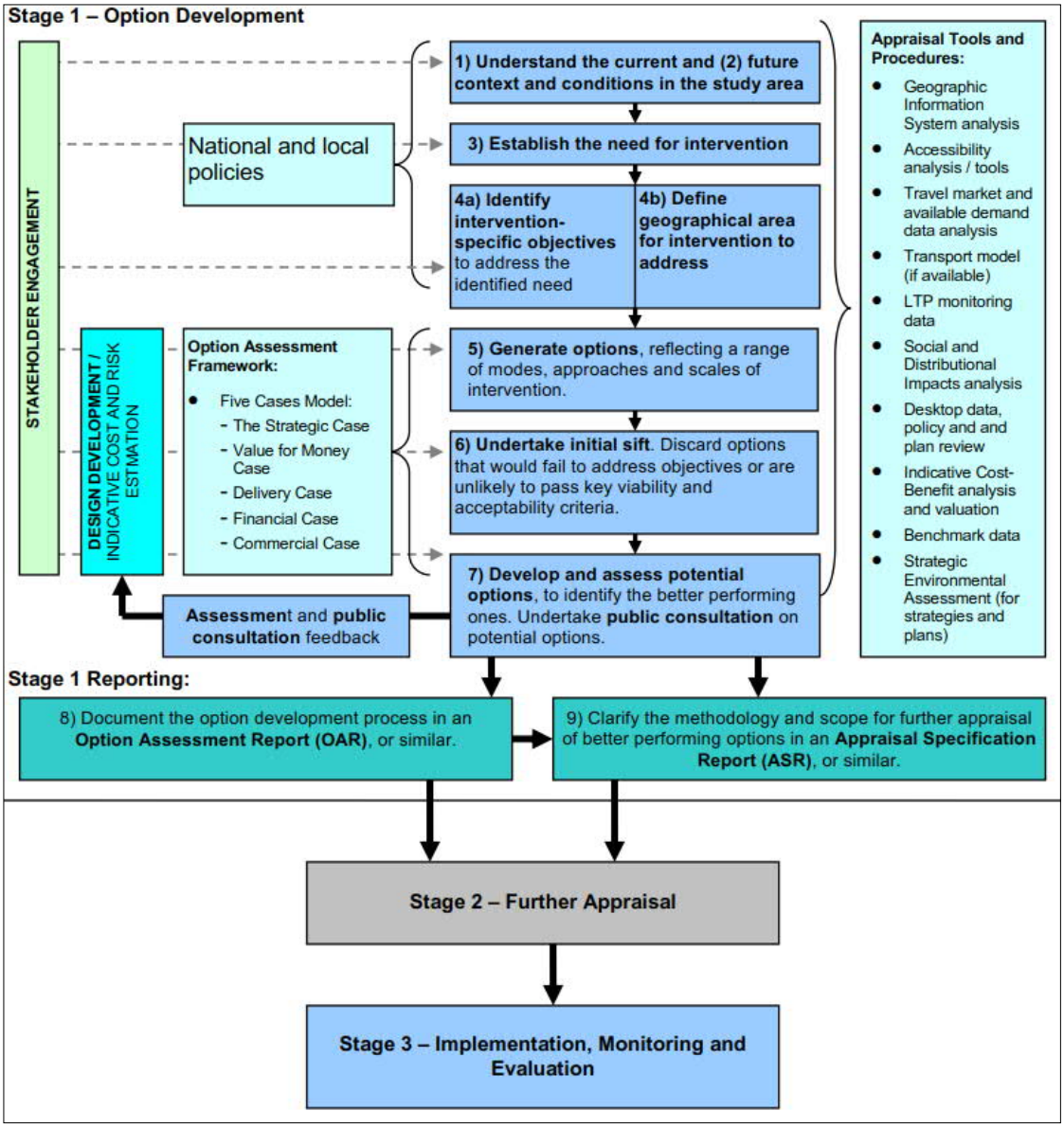


Figure 1-4 . DfT's Transport Appraisal Process
Source: Transport Appraisal Process (DfT, 2018)

1.4.2 Following this introductory chapter, this report is structured as follows:

- Chapter 2: Policy Context
- Chapter 3: Current and Future: Context and Conditions
- Chapter 4: Development of Scheme Objectives
- Chapter 5: Option Development and Sifting
- Chapter 6: Detailed Sift
- Chapter 9: Risks and Assumptions

2 Policy Context

2.1 Introduction

2.1.1 A review of relevant national, regional and local policies (Table 2-1) was undertaken to ensure the proposed scheme aligns with broad policy goals and to confirm whether existing policies and programmes are in favour of interventions in these circumstances, and of a similar type and scale. This review has informed the development of the scheme objectives (see Chapter 4).

Table 2-1 Some of the key reviewed policy documents

National			
National Planning Policy Framework, Ministry of Housing, Communities & Local Government	Industrial Strategy White Paper, Department for Business, Energy & Industrial Strategy	Transport Investment Strategy; Gear Change: A bold vision for cycling and walking report; A Better Deal for Bus Users; Decarbonising Transport, Department for Transport	Housing White Paper – Fixing Our Broken Housing Market, Department for Communities and Local Growth
Regional			
Strategic Economic Plan for Oxfordshire 2016, Oxfordshire Local Enterprise Partnership	Connecting Oxfordshire: Local Transport Plan 2015-2031, Oxfordshire County Council	Oxfordshire Infrastructure Strategy, Oxfordshire County Council	
Local			
West Oxfordshire Adopted Local Plan (2011-2031), West Oxfordshire District Council	Oxford Transport Strategy; Bus and Rapid Transit Strategy; Active and Healthy Travel Strategy; A40 Corridor Strategy, Oxford Park and Ride Strategy. Oxfordshire County Council	Oxfordshire Cotswolds (Salt Cross) Garden Village Area Action Plan; Salt Cross Village Transport Strategy; Eynsham Neighbourhood Plan; and other local housing developments related policies.	

2.2 National Policies

2.2.1 At a national level, Government policy endeavours to balance the need to deliver economic growth for a growing population, increased housing demand and increasingly congested transport networks with a longer-term vision of a sustainable and carbon neutral economy, making better use of available capacity and technology. These are reflected in the National Planning Policy Framework (NPPF), Industrial Strategy White Paper, the Housing White Paper, and the DfT's Transport Investment Strategy.

2.2.2 The **NPPF** seeks to promote sustainable transport and states that significant development should be focused on locations which are or can be made sustainable, through limiting the need to travel and offering a genuine choice of transport modes.

2.2.3 There are currently proposals to create a **Major Road Network (MRN)**[4], and the A40 corridor would be part of this network. The proposals outline five central policy objectives: reduce congestion, supporting economic growth and rebalancing, support housing delivery, support all road users, and support the Strategic Road Network (SRN). The MRN would create a new funding stream to raise the standards of economically and regionally important roads in England (such as the A40 corridor) and seamlessly connect and complement the SRN. The A40 Dualling scheme will enable the A40 to become a key asset to the MRN.

2.2.4 The **Industrial Strategy** states that the availability of high-quality infrastructure is essential for continued growth and prosperity. The Strategy's vision for a transformed economy is centred around productivity, and infrastructure is identified as one of the five foundations of this, such as the A40 Dualling scheme.

2.2.5 The **Housing White Paper** – Fixing Our Broken Housing Market (2017) sets out initiatives that strive to reach a step-change in housing supply in England. There are four key proposals contained within the housing strategy:

- Planning for the right homes in the right places;
- Building homes faster;
- Diversifying the market; and

[4] Proposals for the Creation of a Major Road Network (https://www.gov.uk/government/consultations/proposals-for-the-creation-of-a-major-road-network, 2017)

- Helping people now.

2.2.6 The role of transport in supporting local growth is highlighted in the **DfT's Transport Investment Strategy**, which states that transport investment must seek to create a better and more reliable transport network in order to build a stronger, more balanced economy, enhance productivity and respond to local growth priorities. Its objectives are to:

- Create a more reliable, less congested, and better-connected transport network that works for the users who rely on it;
- Build a stronger, more balanced economy by enhancing productivity and responding to local growth priorities;
- Enhance the global competitiveness by making Britain a more attractive place to trade and invest; and
- Support the creation of new housing (the Housing White Paper recognises transport infrastructure as one of the keys to unlocking development and delivering places where people want to live).

2.2.7 The **Gear Change: A bold vision for cycling and walking** report (2020) aims to see a step-change in cycling and walking in the coming years. The report notes that increasing cycling and walking can help tackle some of the most challenging issues faced by society: improving air quality, combatting climate change, improving health and wellbeing, addressing inequalities and tackling congestion. This will help create better connected, healthier and more sustainable communities. This document is accompanied by the DfT's new 'Cycle Infrastructure Design: Local Transport Note 1/20'. Whilst the 'Gear change' sets out the DfT's aims and vision for the future, the more detailed LTN 1/20 document provides the practical advice to achieving the stated policy aims. The main shift between LTN 1/20 and previous design guidance is the establishment of core design principles (20 design principles). This is especially pertinent in light of the COVID-19 restrictions and its future impacts on travel pattern (which profoundly affected the way individuals live, work and travel and increased the desire to be more active). As the A40 Dualling scheme incorporates enhancements to the current active travel infrastructure along the A40, this design guidance is likely to be followed.

2.2.8 **A Better Deal for Bus Users**[5] highlights the key role which bus play in the transport system and sets aside £220 million to provide bus services which meet the needs and demands of the public. As part of this, bus priority is identified as a key tool to improve bus services. All new road investments in England which receive central government funding will now be required to either support bus priority measures or explain why bus priority is not necessary. There will be further support for local authorities to ensure they have the information they need to effectively prioritise buses.

2.2.9 **Decarbonising Transport: Setting the Challenge**[6] identifies that climate change is the most pressing environmental challenge of our time, and to meet the target to achieve 'net zero' greenhouse gas (GHG) emissions by 2050, transport has a vital role to play. As such, the Transport Decarbonisation Plan (TDP) will set out in detail how the significant reductions in emissions needed across all modes of transport to achieve carbon budgets and net zero emissions across every single mode of transport by 2050. There have been previous strategies to reduce GHG emissions in individual transport modes, the TDP will take a coordinated, cross-modal approach to deliver the transport sector's contribution. The report looks at both how private vehicles can achieve low emissions, but also looks at the role of freight. This is needed in parallel to the rapid development and deployment of clean technology. The TDP is to be released in Spring 2021. This policy document further recognises the importance of planning for sustainable communities and providing a transport system which promotes increased levels of active travel, which the A40 Dualling assists with.

2.3 Regional Policies

2.3.1 OxLEP's **Strategic Economic Plan** (SEP) for Oxfordshire (2016) sets out a vision for Oxfordshire to be a vibrant, sustainable, inclusive, world leading economy, driven by innovation, enterprise and research excellence. Whilst being strong in many areas, including innovation, enterprise and research, the SEP also refers to challenges around the lack of affordable housing, increasing congestion, sustainability and inclusion, and the need for greater resilience. The SEP is clear that the overall priority for Oxfordshire's places is to plan simultaneously for both jobs and housing growth, putting in place the infrastructure required for both, whilst also protecting and where possible enhancing environmental quality and social inclusion. These priorities are consistent with Government policy and the objectives set out in the DfT Transport Investment Strategy but adapted to suit Oxfordshire's own socio-economic and environmental challenges.

2.3.2 In terms of connectivity, the SEP sets out key actions, a number of which are relevant to the A40 corridor, in particular:

- Support for the implementation of the Oxfordshire Local Transport Plan 2015-2031 to address congestion and to identify ways to avoid exacerbating existing problems due to growth;
- Ensure, through the planning process, that connectivity improvements are linked to the scale and location of planned growth; and
- Implement the Oxfordshire Active and Healthy Travel Strategy.

[5] A Better Deal for Bus Users (https://www.gov.uk/government/publications/a-better-deal-for-bus-users/a-better-deal-for-bus-users, 2020)
[6] Decarbonising Transport: Setting the Challenge (https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/932122/decarbonising-transport-setting-the-challenge.pdf, 2020)

2.3.3 OxLEP has also produced the **Oxfordshire Local Industrial Strategy (LIP)** and accompanying **Oxfordshire Investment Plan**. The LIP responds to the government's UK Industrial Strategy and sets out a bold and ambitious vision for Oxfordshire to be one of the top three global innovation systems by 2040. The LIP aims to deliver clean and sustainable transformative growth across Oxfordshire, through focussing on innovation, people (the Oxfordshire Social Contract) and improvements to the physical, digital, financial, knowledge and social infrastructure. The Oxfordshire Investment Plan takes forward the ambitions set out in the LIS, translating policy ideas and commitments to a transformational programme for action and delivery. In the LIP, the severe congestion on the A40 is noted as a key constraint holding Oxfordshire back. In addition, the Oxfordshire Investment Plan identifies the A40 Science Transit and A40 Smart Corridor as part of the 'Infrastructure Pillar' and as such are critical to the success of the county. Therefore, across these two interlinked documents there is a clear and consistent support for the A40 Dualling scheme.

2.3.4 The **Oxfordshire's Housing and Growth Deal**[7] is an agreement between the national government and in the Oxfordshire area councils (Cherwell District Council; Oxford City Council; Oxfordshire County Council; South Oxfordshire District Council; Vale of White Horse District Council; West Oxfordshire District Council) and the Local Enterprise Partnership (OxLEP), to plan and support the delivery of 100,000 new homes between 2011 and 2031. The A40 Smart Corridor supports this ambition by unlocking Local Plan housing growth, which contributes to the Oxfordshire Housing and Growth Deal (HGD).

2.3.5 The **Oxfordshire Infrastructure Strategy** (OXIS) recognises the A40 corridor as a Growth Corridor with key strategic sites along it. The OXIS highlights infrastructure requirements to 2040 and identifies the need to a prioritise and develop a long-term strategy to address congestion on the A40. The A40 Dualling scheme will help improve journey times and reduce congestion.

2.3.6 The **Connecting Oxfordshire Local Transport Plan 4** (LPT4, 2016), is the overarching local plan for transport in Oxfordshire. As part of the plan it includes the Science Transit Strategy, Rail Strategy, Bus and Rapid Transit Strategy and the Active & Healthy Travel Strategy, the latter two of which are discussed further below. The LTP4 is part of the Connecting Oxfordshire series of documents, which includes the A40 Strategy, comprising the A40 Science Transit Phase 2 scheme and the A40 Smart Corridor schemes. LTP4 identifies the problem of "acute traffic congestion" on the A40, and the need for improved public transport. Without improvements to improve public transport infrastructure, the LTP4 predicts that traffic conditions will deteriorate significantly. Chronic A40 congestion, which will likely improve through the proposed scheme, is identified as a means of reducing delays. LTP4 promotes the use of low and zero emission forms of transport including trials of electric buses and supports further pilots, where appropriate. It is expected that new public transport vehicles will conform to high environmental standards.

2.4 Local Policies

2.4.1 The **Oxford Transport Strategy** (OTS) sets out OCC's transport vision and strategy up to 2035 for Oxford as part of the LTP4. The OTS identifies that the number of vehicles entering the city centre is forecast to grow by over 40% if left un-checked, putting substantial strain on the historic core. The OTS identifies a number of road links and junctions that experience substantial delays, including the A40, particularly during the morning peak period. It states that it is necessary to intercept car trips further away from the city and identifies a number of Park & Ride sites including at Eynsham. The A40 Dualling scheme will help improve journey times and reduce congestion between Witney and the proposed Park & Ride site at Eynsham.

2.4.2 The **Bus and Rapid Transit Strategy** (2016) has been developed to complement the LTP4 and the main elements of the strategy include integration of the bus network and provision of accessible, high quality infrastructure. The strategy also includes development of a mass rapid transit system and routes between Oxford and proposed Park and Ride sites; aims to tackle congestion and delays; and development or upgrade of new high quality premium urban and interurban services. The **Oxford Park and Ride Strategy** (2016) is located within the Bus and Rapid Transit Strategy, in which it is identified that Oxford's Park and Ride system is a key element affecting the City and County's bus system and changes to the Park and Ride strategy and system will have a considerable impact on the planning operation and attractiveness of the public transport network. Through provision of improved access to the proposed Park & Ride site at Eynsham/ bus interchange, it is expected that the A40 Dualling scheme will help achieve the aims of both of these strategies.

2.4.3 The **Active and Healthy Travel Strategy** (2016) also builds on the LTP4 with the aim to 'contribute to reducing pressure on the road network, contribute to economic growth and the reduction of emissions, quality of life and health, and link active travel with bus and rail options by enabling sustainable door to door journeys combining cycling or walking with public transport'. The strategy outlines that cycling alone cannot replace the car for long journeys but does state that the combination of cycling and public transport can create more door-to-door sustainable trips. There is also encouragement of walking and to prioritise funding available for the best value for money investments for walking. The enhancement of the existing active travel infrastructure alongside the A40 as part of the A40 Dualling scheme will encourage active travel along the A40 Corridor.

[7] Oxfordshire Housing and Growth Deal (2018, https://www.gov.uk/government/publications/oxfordshire-housing-deal)

2.4.4 **West Oxfordshire District Council** (WODC) adopted their **Local Plan (2011 – 2031)** in 2018, noting it was underpinned by a general presumption in favour of 'sustainable development'. Once adopted, applications for planning permission must be determined in accordance with the plan unless material considerations indicate otherwise; and that they would work with OCC (as the highways authority), developers, local councils, bus and rail operators and other voluntary and community sectors to:

- Increase the use of bus, rail and community transport through the provision of improved services, facilities and information including specific schemes identified in the Local Transport Plan (Connecting Oxfordshire) and Infrastructure Delivery Plan (IDP); and
- Provide safe and convenient travel within and between the network of towns and villages in West Oxfordshire, particularly for pedestrians, cyclists and other vulnerable road users, users of public and community transport including specific schemes identified in the Local Transport Plan and IDP.

2.4.5 The Local Plan highlights the need to provide access to high quality public transport facilities and focus on new developments in areas that have good access to sustainable transport. As part of the Local Plan, the West Oxfordshire District Council IDP has been adopted which identifies the infrastructure which is needed to support future growth in West Oxfordshire until 2031. The A40 Smart Corridor scheme is included in the IDP (under the names A40 Science Transit and A40 Longer Term Strategy).

2.4.6 The Local Plan contains several Core Policies which are related to the A40 Dualling scheme:

- The West Oxfordshire Local Plan identifies transport in West Oxfordshire as an issue of critical importance. It is recognised that the level of commuting between West Oxfordshire and Oxford is putting significant pressure on the A40 resulting in daily occurrences of congestion;
- The Local Plan states that A40 problems are a major constraint to inward investment into the District, and relieving congestion through investment in transport infrastructure is important in terms of public amenity and air quality, and essential to unlocking future housing provision and sustainable economic growth. The commitment to deliver the Local Plan is underpinned by critical infrastructure delivery. The A40 Smart Corridor scheme is defined as "critical" within the Local Plan IDP;
- The Local Plan's Policy T1 states that the council will continue to work in partnership with Oxfordshire County Council in relation to securing improvements to the A40 between Witney and Oxford. This will include longer term improvements, including the provision of a westbound bus lane from Oxford to Eynsham and dualling of the A40 between Witney and Eynsham[8];
- Highway Improvement Schemes, which includes West Oxfordshire District Council's commitment to work in partnership with OCC;
- Oxfordshire Cotswolds (now called Salt Cross) Garden Village: Strategic Location for Growth (this is A40 Smart Corridor dependent development); and
- Eynsham-Woodstock Sub-Area Strategy: anticipates delivery of over 5,500 homes in the sub-area. It recognises transport as a key issue in the sub-area, specifically the significant congestion between Eynsham and Oxford during peak hours[9].

2.4.7 Furthermore, WODC's Local Plan seeks to provide for at least 15,950 homes and identifies four Strategic Development Areas (SDA), of which three are along the A40 Corridor and the A40 Dualling scheme will help support these (Figure 2-1):

- East Witney (450 homes; SDA site);
- North Witney (1,400 homes; SDA site);
- Oxfordshire Cotswolds (now called Salt Cross) Garden Village (2,200 homes)[10];
- West Eynsham (1,000 homes; SDA site);
- A further 100 homes would be delivered at two large sites within Carterton; and
- Overall the A40 corridor in West Oxfordshire will see an increase of around 10,000 homes.

[8] HIF2 Business Case Submission, OCC (2019)
[9] Eynsham P&R modelling report_with_appendices_18032019.pdf; https://www.westoxon.gov.uk/media/1912795/eynsham-woodstock-sub-area.pdf
[10] Oxfordshire Cotswolds (now called Salt Cross) Garden Village is proposed as a 'Strategic Location for Growth' (SLG) in the WODC Local Plan.

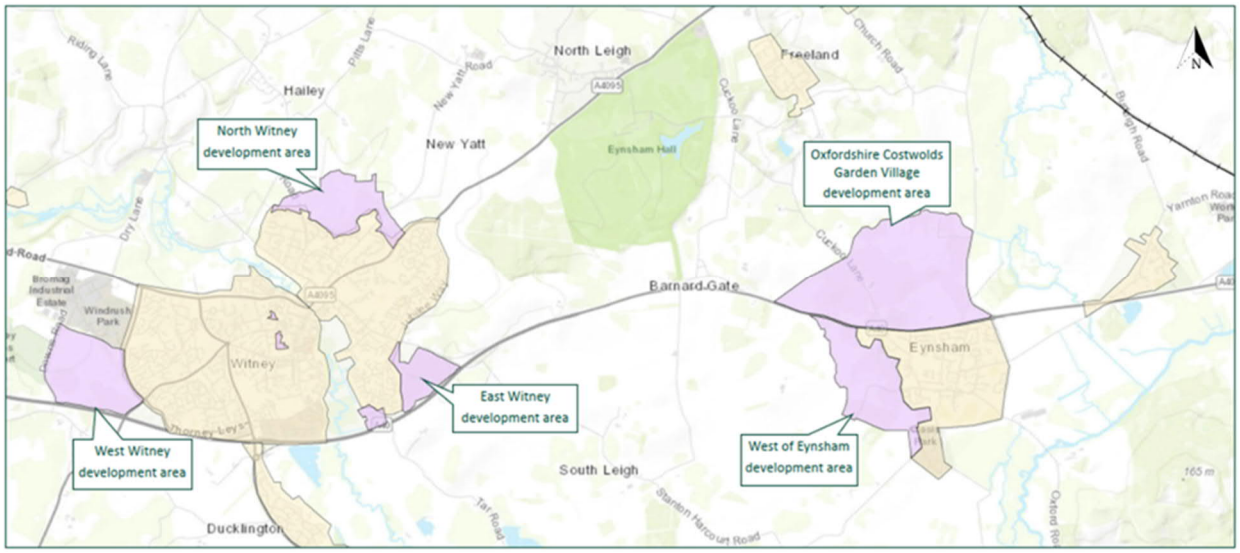


Figure 2-1. Key Strategic Development Areas at Eynsham and Witney
Source: A40 Strategy – Consultation (OCC, 2019)

2.4.8 Furthermore, as part of the 2019 **HIF Bid** for the A40 Smart Corridor scheme it was demonstrated that the A40 Smart Corridor, which includes the A40 Dualling, has a clear alignment with local planning policies. For example, it is highlighted that the scheme will help achieve the policies, and housing targets, identified in the WODC Local Plan. The scheme is also in alignment with county-wide policies, such as the LTP4 and OXIS. The HIF Bid provided solid and clear justification for the scheme, which as mentioned above, led to funding being awarded for the A40 Smart Corridor, which includes the A40 Dualling.

2.4.9 **The Salt Cross Garden Village Area Action Plan (AAP)** (pre-submission draft, August 2020) establishes a vision for Salt Cross and will be used alongside the Local Plan and Eynsham Neighbourhood Plan to determine future development proposals. WODC have published the final pre-submission draft version of the AAP which has been submitted to the Secretary of State for independent examination.

2.4.10 The Salt Cross Garden Village AAP also states that sustainable travel options are required to enable delivery of the strategic housing and employment development sites proposed along the A40 corridor in the West Oxfordshire's Local Plan, including Salt Cross. In addition, modelling undertaken in support for the AAP demonstrates that development at Salt Cross will have an impact on the A40 and surrounding routes and that there will be remaining problems on the network during peak periods. Therefore, it is imperative that development at Salt Cross supports the 'Connecting Oxford' plans and encourage modal shift.

2.4.11 It is highlighted as part of the AAP that Salt Cross will benefit from the sustainable transport infrastructure along the A40 Corridor including eastbound and westbound bus lanes; improved cycling and walking connections; capacity improvements between Witney and Eynsham; and a new Park & Ride site located within the garden village site which will form the focus of a new 'Sustainable Transport Hub'. It is important to ensure that the active and healthy travel initiatives associated with Salt Cross are effectively integrated with the A40 Corridor schemes. The A40 Corridor improvement schemes are included in the policies of the Salt Cross AAP, as outlined below:

- Policy 14 – Active and Healthy Travel
    - Upgraded A40 footway/ cycleway
    - A40 Duke's Cut Bridge works
- Policy 15 – Public Transport
    - A40 Eastbound bus lanes: Between Eynsham Park & Ride and Wolvercote roundabout (including widening and/ or strengthening works to the bridge structures at Duke's Cut).
    - A40 Westbound bus lanes: Between Eynsham Park & Ride and Duke's Cut Bridges.
    - Adjustments to A40 junctions and the provision of bus gates to give priority to buses joining the general traffic lane where continuous bus lanes cannot be provided.
    - Improved bus stop provision.
- Policy 17 – Road Connectivity and Access
    - Extension of the **existing A40 dualling** (between Witney and the new Park & Ride access junction).

- Improvements to the Lower Road/ A40 roundabout.
- Highway and junction capacity improvements along the A40 as part of the A40 Corridor improvements.
- Provision of enhanced facilities at the proposed Eynsham Park & Ride.

2.4.12 The Garden Village Development will require a new roundabout (the 'Western Development Roundabout') to be delivered, located on the A40 to the west of the proposed Park & Ride access junction. This development required infrastructure will need to be fully integrated with the A40 Dualling scheme

2.4.13 **A Salt Cross Garden Village Transport Strategy** (July 2020) has been developed as part of the Salt Cross Area Action Plan. The OCGV acknowledges that car dependent settlements based around the needs of car users must be avoided as this undermines the benefits of the A40 corridor schemes and results in rat running through the Garden Village and surrounding villages. In order minimise this car use, opportunities to achieve a modal shift towards active travel and public transport need to be created. This will be done through creating movement and connectivity that achieves the following:

- A sustainable community where walking and cycling are the prime modes of choice;
- Digitally connected developments that enable work from home or work from local hub;
- Development which by its best practice design principles, facilities and encourages active and healthy travel;
- Development that supports the A40 Corridor improvements; and
- A future proofed settlement that can respond to technological and societal changes.

2.4.14 The A40 Corridor Improvements are outlined as part of the Transport Strategy, highlighting the importance of the improvements for the Salt Cross Garden Village. The Garden Village can support the A40 Corridor Improvements, and the A40 Corridor Improvements will provide the Garden Village with enhanced sustainable travel options.

2.4.15 In addition, the **Eynsham Neighbourhood Plan 2018-2031**[11] (2020) notes that the Eynsham village is the fourth largest community in West Oxfordshire, which makes it bigger than some small nearby towns. It highlights the congestion along the A40 in peak periods. Policy ENP7 Sustainable Transport, supports WODC Policy T1 outlines that new development shall have safe access to local transport networks by private car and public transport. This includes a preference for developments to be accessed by vehicles by existing main roads (A40, B4044 and B4449) and not using Eynsham village roads. Furthermore, encouragement shall be given to the use of alternatives to private cars, such as the proposed Eynsham Park and Ride. Importance is placed on improved connectivity to and within the village, as well as reducing the severance caused by the A40. In addition, policy ENP5 Sustainability: Climate Change highlights the particular support will be given for proposals that help meet the intentions of the Climate Change 2008. This reaffirms the policy goals of the WODC Local Plan to address the climate emergency. Overall, it is clear that there is alignment with the A40 Dualling scheme and the Eynsham Neighbourhood Plan as it will provide increased capacity and improved access to the proposed Park and Ride site, reducing congestion along the A40 north of Eynsham.

2.4.16 A table showing the alignment of each policy document considered above and the A40 Dualling scheme can be found in **Appendix B.**

Relevance to the A40 Dualling scheme

The policies largely focus on infrastructure investment, promoting sustainable travel, delivering homes and jobs, reducing congestion, improving air quality and health.

The investment in the A40 Dualling scheme will provide increased capacity along the A40 which will help reduce queues and congestion as well as improve journey times and journey time reliability along the route. This will help support housing and economic growth along the A40 corridor. It is a key piece of infrastructure in Oxfordshire and as such will help achieve many of the strategic goals as outlined in the OCC LTP4 and the WODC Local Plan. Enhancement of the active travel infrastructure alongside the A40 as part of the Dualling scheme will support use of active travel. Local Plan allocations show there to be a significant amount of proposed development along the A40 Corridor, which need to be considered in conjunction with suitable transport schemes and mitigation. For example, the emerging planning documents related to the Salt Cross Garden Village highlight the importance of sufficient transport capacity along the A40 Corridor and highlight the importance of the A40 Dualling scheme specifically. Provision of the A40 Dualling scheme will increase capacity along the A40. Overall, across the local, regional and national policies considered there is expected to be strong support for the A40 Dualling scheme as it will help achieve many of these policies.

[11] https://eynsham-pc.gov.uk/variable/organisation/173/attachments/Eynsham-Neighbourhood-Plan-2018-2031-Referendum_FINAL.pdf

3 Current and Future: Context and Conditions

3.1 Introduction

3.1.1 This chapter of the report provides a summary of key contextual factors influencing the local area and a review of the current and forecast conditions. It reviews the existing data and previous work conducted in order to identify key challenges in the study area, which would help develop the scheme objectives and, subsequently, a suitable scheme to meet those objectives. The scheme objectives (see Chapter 4) will be critical in later stages to assess and sift options, as well as becoming a key component against which the final proposed solution will be appraised and, following implementation, evaluated.

3.1.2 Appendix A lists the existing studies, strategies and data that have been used to understand the local context. Given the significant amount of work already undertaken to understand and assess current and future issues in the area, as well as potential solutions, only a summary of the most pertinent points are presented in this chapter.

3.2 Geographic Context

3.2.1 West Oxfordshire is one of the five districts which make up the county of Oxfordshire. Its largest settlement is Witney but other significant centres in the district include Carterton and Chipping Norton. The district spans the area between the Oxford Green Belt and the Cotswolds Area of Outstanding Natural Beauty. Its southern boundary is marked by the River Thames and a number of the Thames' major tributaries (e.g. the Glyme, Windrush and Evenlode) flow through the district (as shown in Figure 1-1 in Chapter 1).

3.2.2 The A40 forms a major east-west route across the south of the district. It forms the Primary Route between Oxford and Cheltenham as well as being part of the long-distance route between London and south-west Wales. The road passes close to Witney and Carterton as well as the smaller settlements of Eynsham and Burford. The A40 is also signed as the advisory route for lorry traffic between Oxford and Eynsham to encourage these vehicles to avoid the Air Quality Management Area in Chipping Norton (located to the north of Witney on the A44).

3.2.3 The A40 forms the most direct transport link between Oxford and Witney although there are less suitable alternatives using A4095/A44 and A415/B4449/B4044; the A4095/A44 also forms an alternative route for bypassing the A40 and Oxford and accessing the M40 for longer distance traffic. The B4044 passes over the Swinford Toll Bridge which has limited capacity and is subject to queues at peak hours; the A4095 passes through the centre of Witney where there are long-standing capacity and environmental issues. Currently nearly all public transport connections between Oxford and Witney also use the A40, at least on the section between Witney and Eynsham. Some vehicle traffic between Carterton and Oxford travels via Bampton (B4449/A415) to the A420 to avoid the A40.

3.3 Current Conditions

3.3.1 As part of the initial stage of option development, it is important to understand the current context and conditions in the study area, including the main issues and the proposals that have been put forward in recent years to address these.

3.3.2 The local context and, where appropriate, current and future trends for the following are discussed in this section:

- Socio-economic context;
- Existing highways and public transport infrastructure;
- Cycle routes and public rights of way;
- Travel patterns and modal share;
- Collisions;
- Traffic flows and congestion issues; and
- Environment.

Socio-economic Context

3.3.3 Selected socio-economic indicators are presented in Table 3-1. West Oxfordshire has a population of 110,600, constituting approximately 16% of Oxfordshire's population.

3.3.4 The district has higher levels of employment compared to the averages in Oxford, Oxfordshire, the South East and England. The ratio of jobs to population is 0.86, which is comparable to the region and England as a whole, while being significantly lower than the employment opportunities provided in Oxford. This indicates a requirement for out-commuting to the regional centre or further afield for residents in the district, thus transport infrastructure schemes (such as the A40 Dualling) could help improve accessibility and agglomeration benefits.

3.3.5 While the proportion of the population with qualifications at NVQ4 and above is slightly lower than the average in Oxford, it is higher than the averages in the county, the South East region, and England.

3.3.6 Weekly pay in West Oxfordshire is approximately 7% higher than the England average. However, house prices are approximately 29% higher than the England average, although lower than the county average.

Table 3-1 Socio-economic Metrics

Metrics		West Oxfordshire	Oxford	Oxfordshire	South East	England
Population (2019)	All people (2019)	110,600	152,500	691,700	9,180,100	56,287,000
	Population aged 16 – 64	59.8%	69.6%	62.5%	61.2%	62.4%
	Qualifications at NVQ4 and above	53.7%	57.9%	50.9%	43.4%	40.0%
Employment (Jul 2019 – June 2020)	Economically active – in employment	79.8%	79.5%	82.5%	79.3%	76.2%
	Economically active – unemployed	2.8%	3.3%	2.5%	3.4%	4%
	Economic inactivity*	17.7%	16.5%	15.2%	17.8%	20.5%
	Part time proportion	34.8%	33.1%	32.3%	33.2%	32%
Job Density (2018)	Ratio jobs: population aged 16-64	0.86	1.33	0.67	0.88	0.87
Employee Jobs (2019)	The 2 largest employment sectors	15.2%	28.9%	15.7%	16.4%	15.4%
		Wholesale And Retail Trade; Repair Of Motor Vehicles And Motorcycles	Education		Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	
		10.9%	17.4%	14.6%	12.8%	12.8%
		Manufacturing; Accommodation and Food Service Activities	Human Health and Social Work Activities	Wholesale and Retail Trade; Repair of Motor Vehicles and Motorcycles	Human Health and Social Work Activities	
Gross Weekly Pay (by residence) 2020	Full-Time Workers	£632.10	£666.60	£662.00	£631.80	£589.80
	Ratio compared to England	1.07	1.13	1.12	1.07	1.00
House Prices	Average House Price (Dec. 2020)**	£289,676	£391,738	£309,142	£271,016	£224,650
	Ratio compared to England	1.29	1.74	1.38	1.21	1.00

Source: NOMIS, unless stated otherwise

**Student, Looking after family/home, Temporary sick, Long-term sick, Discouraged, Retired, Other*

***UK House Price Index: Average price for first-time buyers*

3.3.7 Figure 3-1 shows the indices of Multiple Deprivation at a Lower Layer Super Output Area (LSOA) around the A40 corridor. Generally, the A40 corridor bypasses areas that would not be considered either the most or least deprived areas in the country. However, the A40 corridor does connect some of the least deprived neighbourhoods nationally, such as neighbourhoods within the wards of Witney East in Witney; Eynsham and Cassington in Eynsham; and Wolvercote and Summertown in Oxford. Similarly, the A40 corridor also connects some of the most deprived neighbourhoods, such as neighbourhoods within the wards of Northfield Brook and Carfax in Oxford. A range of domains are driving this deprivation, such as crime, health, and education.

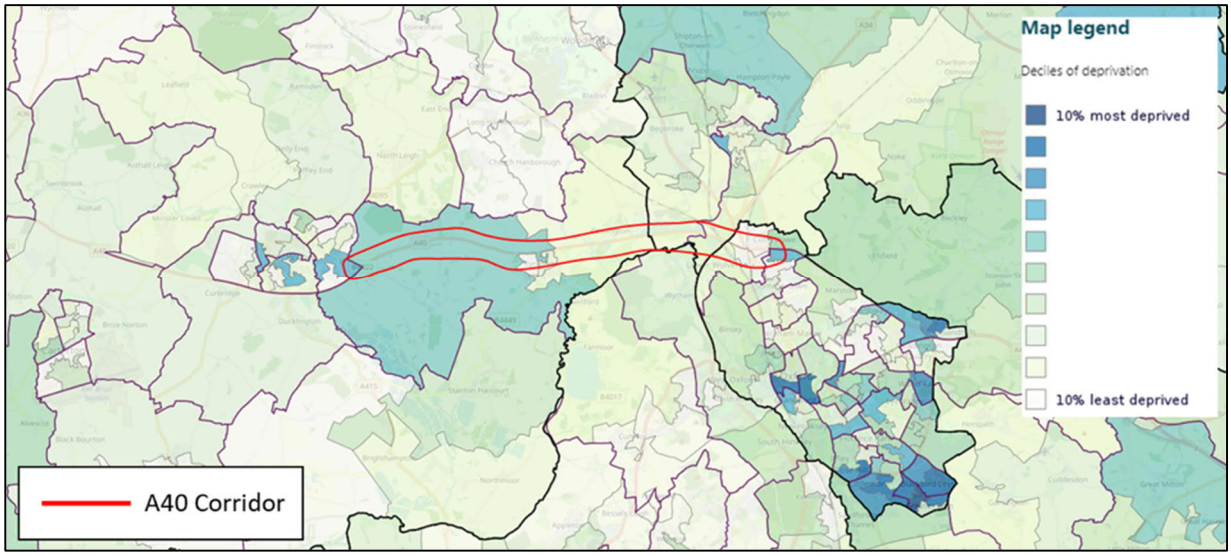


Figure 3-1 Indices of Multiple Deprivation
Source: Ministry of Housing, Communities & Local Government (2019)

Existing Highways and Public Transport Infrastructure

3.3.8 Figure 3-2 shows the road network in the area around the A40 corridor. The A40 is an important long-distance route linking central and east England with the south west and south and west Wales. It is also the main arterial route in West Oxfordshire linking the growing towns of Witney and Carterton with Oxford and the wider country. The A40 corridor connects with several B roads that provide alternative routes between the towns and villages in West Oxfordshire, such as the B4044 between Eynsham and Oxford.

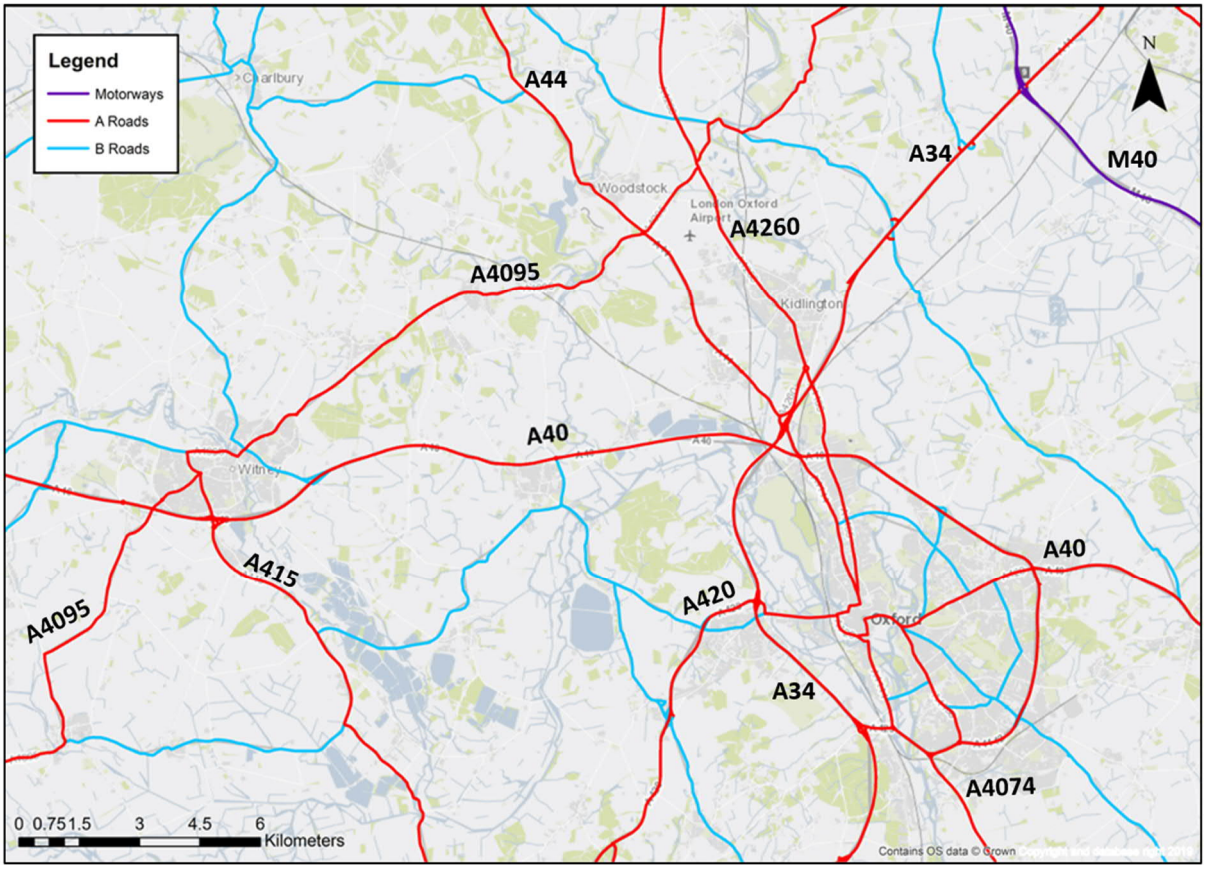


Figure 3-2. Road Network

Source: AECOM © Crown copyright and database right 2020

3.3.9 Table 3-2 outlines the characteristics of the A40 between Witney and Duke's Cut, and the surrounding road network, including details of carriageways and footways.

Table 3-2 Information on Local Road Network

Road	Speed Limit (mph)	Single/Dual	Footways/Cycle
A40	National Speed Limit (60mph)	Single (section between Witney Shores Green and Hill Farm is Dual)	Both sides of carriageway from Eynsham to Duke's Cut.
Lower Road	National Speed Limit (60mph)	Single	No existing footways
Cuckoo Lane	National Speed Limit (60mph)	Single	No existing footways
A4095	Varies Along Route	Single	Varies along route but generally provided in villages
Witney Road	30mph	Single	Both sides of carriageway
B4449	50mph	Single	No existing footways on northern section, one footway on southern link
B4044	50mph (and 40mph at Farmoor)	Single	Generally provided on one side

Source: Oxfordshire Cotswolds Garden Village Transport Assessment (Stantec, 2020)

3.3.10 The regional rail network is demonstrated in Figure 3-3. Several rail stations are in the vicinity of the A40 corridor, all with services connecting to Oxford. The Oxford – London service operated by Chiltern Railways connects Oxford, Oxford Parkway, and Islip with London Marylebone. Using this service, it takes around 1 hour 20 minutes to travel from Oxford to London Marylebone during weekday morning peaks. CrossCountry runs a service between Bournemouth and Manchester that stops at Oxford station. Great Western Railways also serves stations in the area, specifically Oxford, Hanborough, and Combe. Using the GWR routes, these stations can be connected with Hereford, Reading and London Paddington, among other locations. During weekday morning peaks, it takes around an hour to travel between Oxford and London Paddington.

3.3.11 As part of the Salt Cross Garden Village AAP, it is identified that Hanborough Station is the closest to the Garden Village, and therefore the opportunity is presented to encourage modal shift and increase use of the station through provision of active travel links. There is a vision for Hanborough Station which is that by the end of the Local Plan period in 2031, it will be a modern and efficient transport and mobility hub for West Oxfordshire. This could increase the number of trains to four per hour, with a train every 30 minutes to London and Worcester.

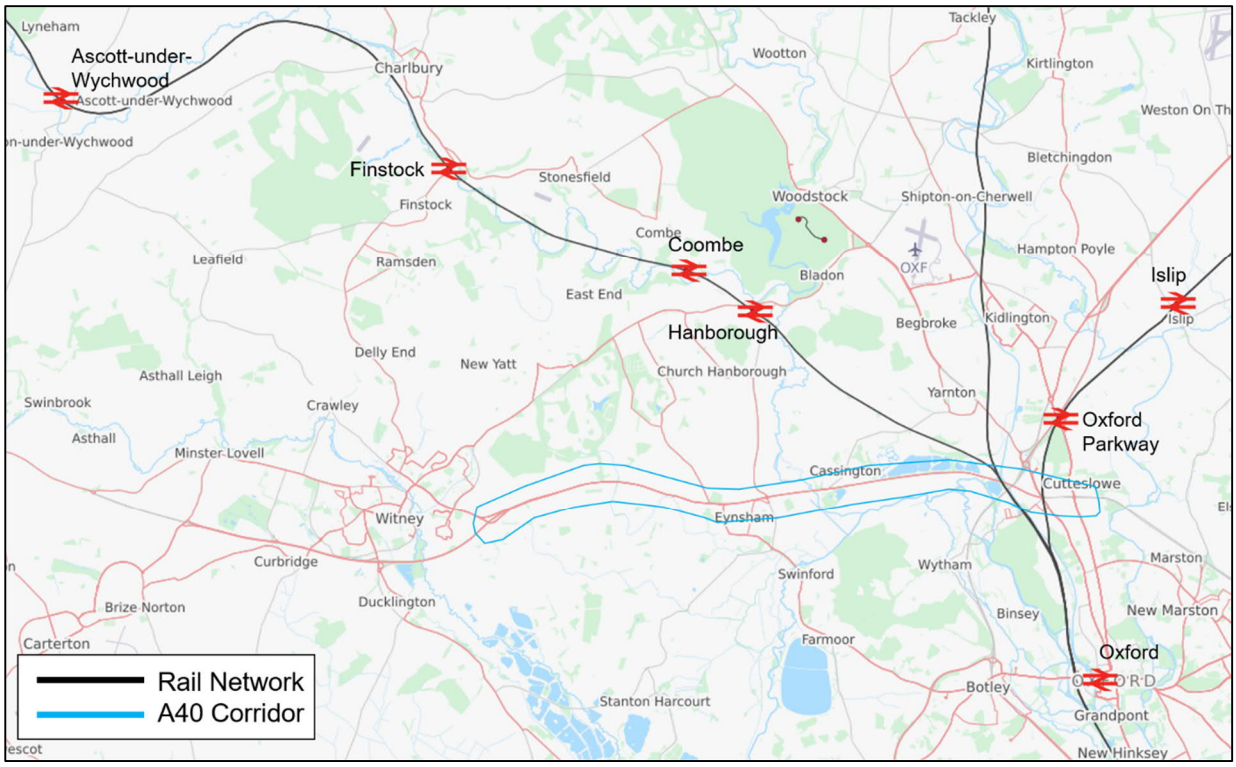


Figure 3-3. Rail Network along the A40 Corridor
Source: OpenStreetMap (2020)

3.3.12 Bus services along the A40 Corridor are shown in Figure 3-4. The Witney – Oxford corridor is served by four main bus services:

- S1/NS1 which runs between Oxford, Witney and Carterton via Botley, Farmoor, Eynsham (village) and Curbridge (4 buses per hour through the day with additional services running in peak hours plus out of peak and night services);
- S2/NS2 which runs between Oxford and Witney & Carterton via Wolvercote, Cassington, Eynsham (A40) and Minster Lovell (2 buses per hour through the day plus out of peak and night services);
- H2 (formerly the S7) which runs between Oxford, Witney and Carterton via Oxford Brookes University, John Radcliffe Hospital, Summertown and Eynsham (1 bus per hour Monday to Saturday, with a limited service on Sunday); and
- 11 which runs between Oxford and Witney via Botley, Farmoor, Eynsham (village), Long Hanborough, Freeland and North Leigh (1 bus per hour between 0600 and 1800).

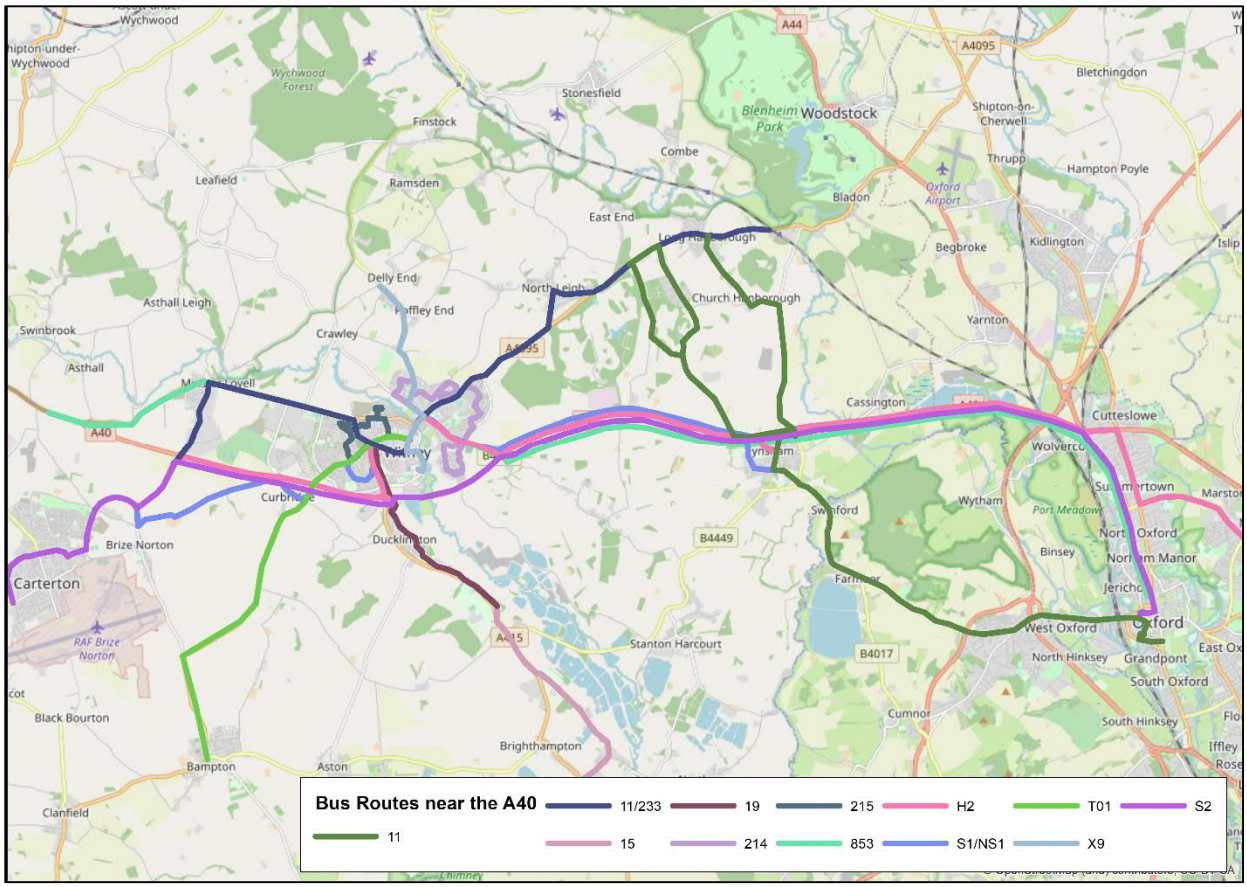


Figure 3-4 Bus Network along the A40 Corridor

Source: AECOM analysis based on OpenStreetMap (2020)

3.3.13 The 853 bus route provides a long-distance service along the A40 between Cheltenham and Oxford. This service is infrequent, running four times a day Monday – Saturday, and takes approximately 1 hour 45 minutes.

3.3.14 In addition, the S7 runs a limited, out of peak hours only service between Witney and the John Radcliffe Hospital in Headington along the A40. Discussions with Stagecoach have suggested that they are unable to run services during the peak because of concerns around operating to a reliable timetable during these hours[12]. A transport scheme (such as the A40 Dualling and others) should help improve journey time along the A40 and further and would lead to an increase in bus patronage and modal shift.

3.3.15 The existing bus infrastructure varies along the A40 corridor. At present, there is no bus lane provision along the A40 Corridor. Along the A40 corridor there are six bus stops, three in each direction. Both the Cassington Turn and Evenlode Bus stops (both directions) have a bus shelter and a bus flag and are situated in a lay-by. The A40 Slip Road bus stops (Witney) provide a lay-by and a bus flag, but no bus shelter.

3.3.16 Currently, the S1/NS1, S2/NS2 and S7 are both run by luxury Gold double-decker buses which includes WiFi on board, extra legroom and leather seats. The 11 service is operated by a single decker bus service.

Pedestrian and Cycle Infrastructure Provision and Use

3.3.17 Active travel infrastructure is available along most of the A40 corridor. A landscaped safety strip is provided on the carriageway verge which separates the carriageway from the footway/ shared path (Figure 3-5 and Figure 3-6). A footway/cycleway is available on the northern side of the A40 between Witney and Eynsham, and on both sides of the A40 between Eynsham and Oxford. From Shores Green to Cuckoo Lane the shared use path is between 1m - 1.5m in width, reducing to under 1m through Eynsham. From Cassington to Duke's Cut the shared use path is 1m wide.

3.3.18 An uncontrolled staggered crossing with dropped kerbs, tactile paving and a central refuge island with railings, is located adjacent to the Tesco Express / Petrol Filling Station, and an informal uncontrolled crossing with dropped kerbs is located approximately 300m to the west of Eynsham Roundabout. Further, a staggered signalised crossing is located on the eastern arm of the A40 / Witney Road signalised junction. The active travel infrastructure, as part of the A40 Dualling scheme, should help expand this network and provide safer crossing points along the A40.

[12] A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017)

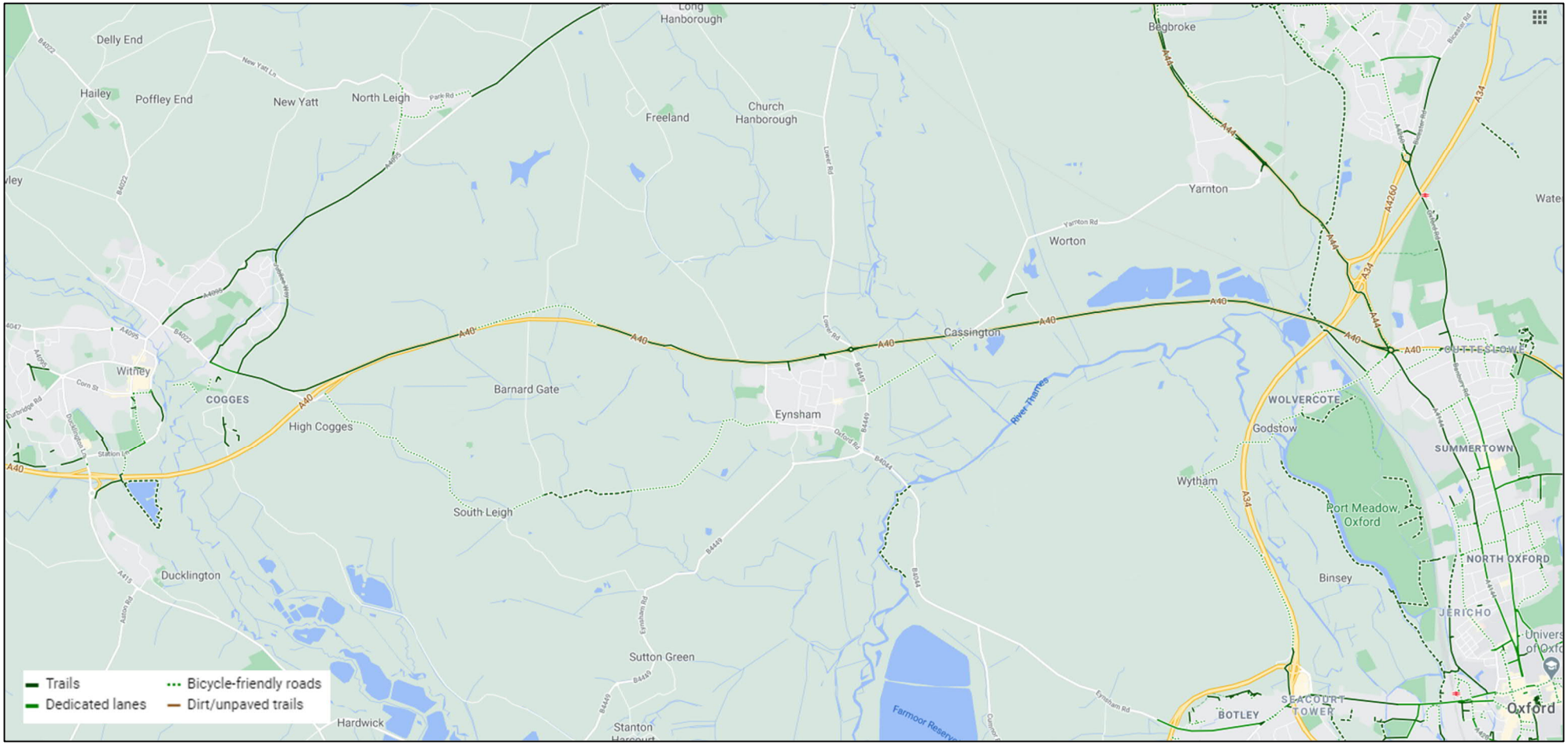


Figure 3-5. Cycle Infrastructure on the A40 Corridor

Source: Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license agreement with Google

Figure 3-6. A40 Footway/Cycleway between Eynsham and Cassington

Source: Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license agreement with Google

3.3.19 In the OCC A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision (June 2020) report an assessment of the existing and future active travel network and volumes along the A40 was undertaken. Figure 3-7 and Figure 3-8 show the typical weekday 24-hour two-way flows for pedestrian and cyclists respectively. This data was collected in November 2017, as AECOM reviewed camera surveys undertaken from Sunday 19th November 2017 to Saturday 25th November 2017. Figure 3-7 shows that use of the paths alongside the A40 varies dependent on location, with the sections of the path near to Eynsham and Cassington having higher footfall than more rural sections. In Eynsham, it appears pedestrians use the A40 to access the bus stops near the Evenlode pub. Similarly, in Cassington there are higher pedestrian flows near bus stops on the A40. In many rural locations there are no crossing facilities available for pedestrians in the vicinity of bus stops.

3.3.20 Figure 3-8 suggests that from west to east between Eynsham and Cassington, the number of cyclists using the A40 doubles as volumes join at Cassington Road. This is likely because further east is closer to Oxford and therefore a shorter cycle. In Eynsham there are some cyclists travelling westbound towards Witney.

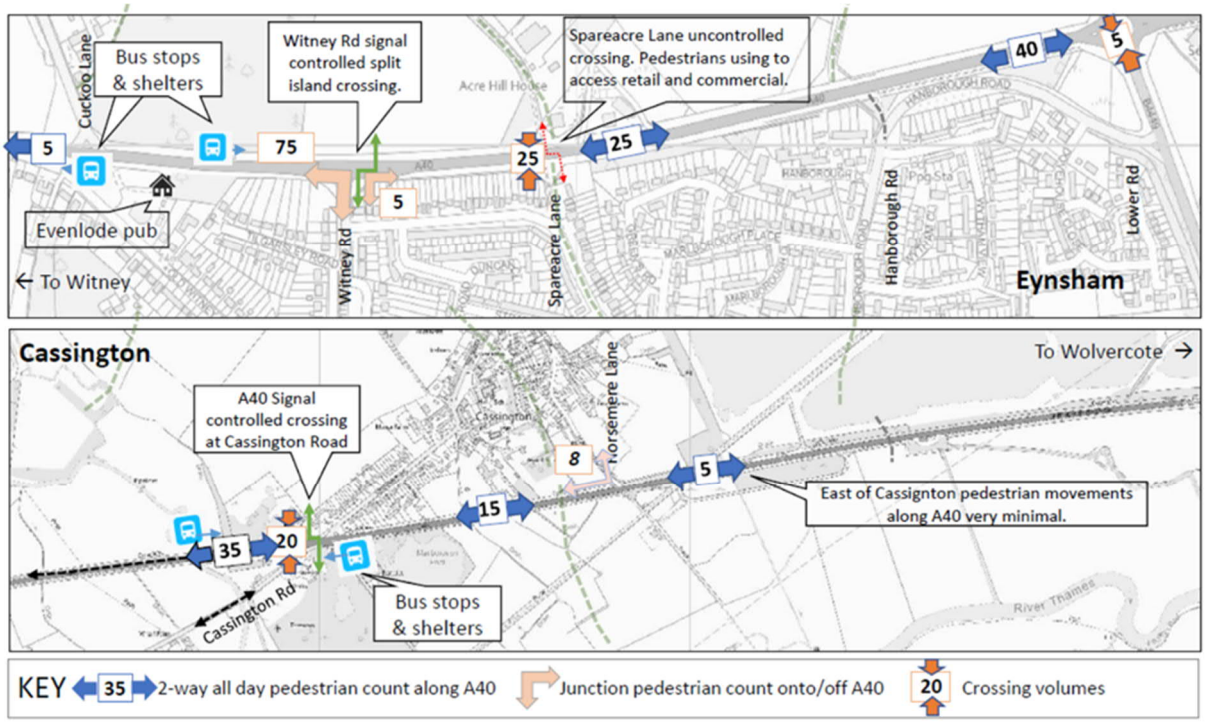


Figure 3-7 Typical Weekday 24hr 2-Way A40 Pedestrian Count

Source: A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision

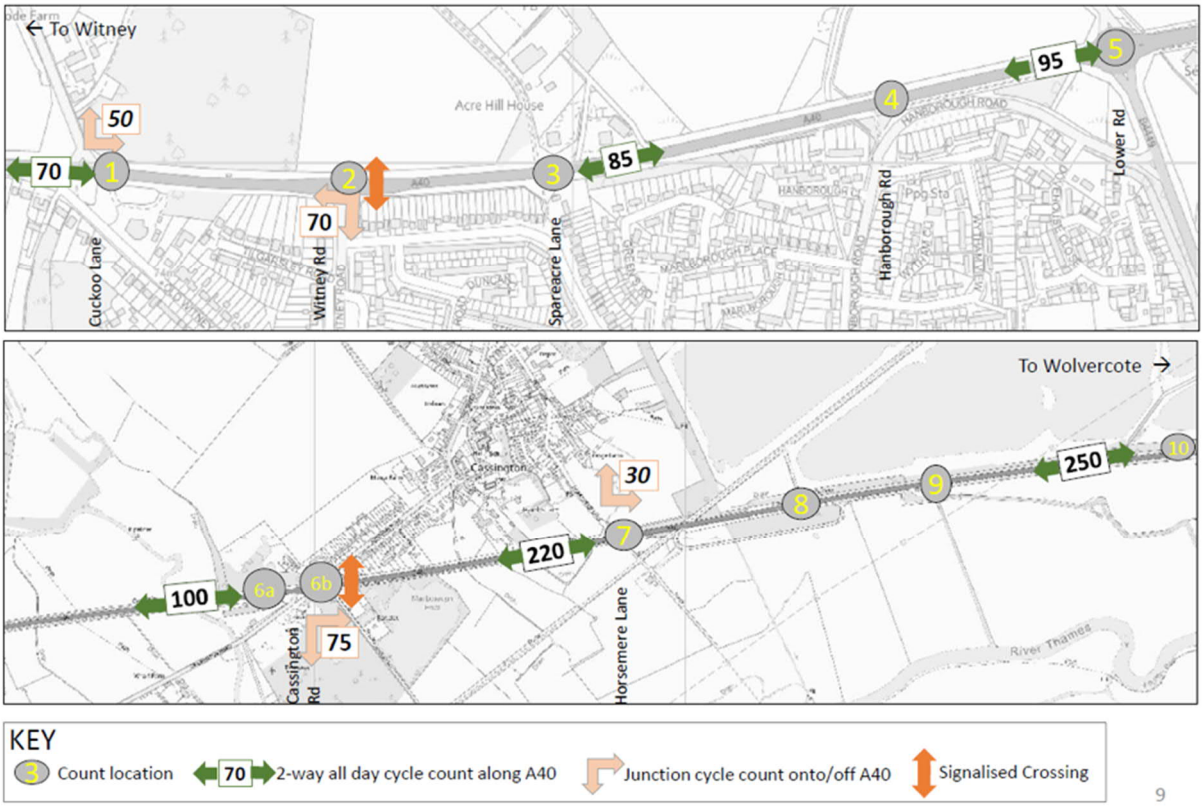


Figure 3-8 Typical Weekday 24hr 2-Way A40 Cyclist Count

Source: A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision

3.3.21 Figure 3-7 and Figure 3-8 above, Figure 3-9 below shows the weekday cycle totals on the A40 shared use path, split by whether the north side or south side path was used.

3.3.22 Figure 3-9 shows that 75% of cycle traffic between Cassington Road and Duke's Cut use the South Side path, and this increases to over 85% for only westbound flows. West of Witney Road there is no south side path. Between Witney Road and Lower Road there is a balance in the use of north and south side pathways, and these are used by both pedestrians and cyclists.

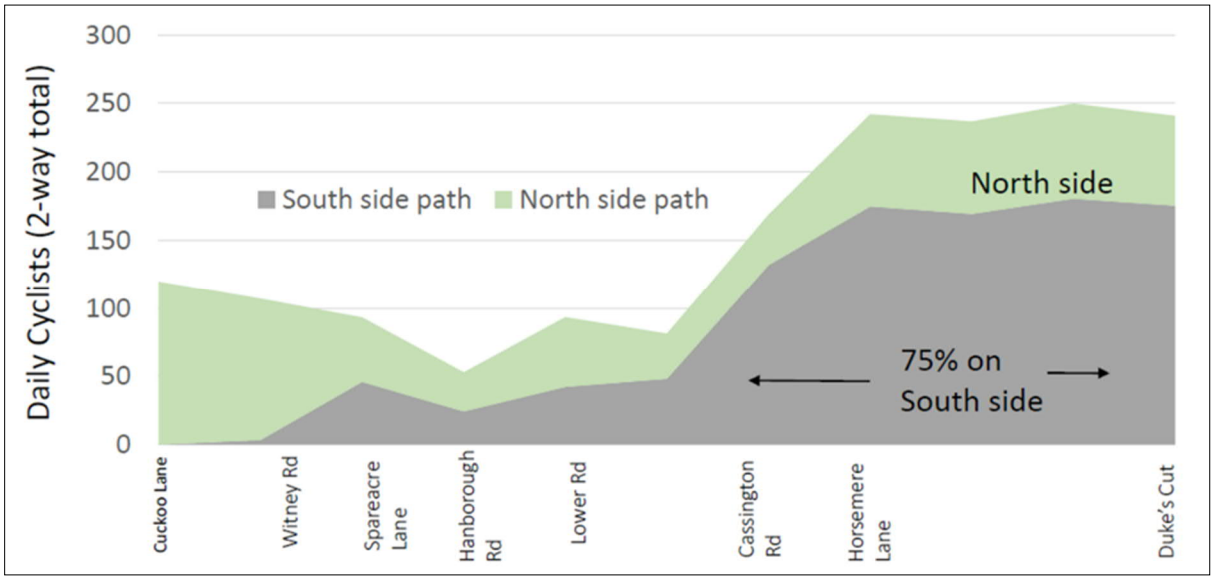


Figure 3-9 Weekday Cycle Totals at Count Points (counts as of November 2017)

Source: A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision

3.3.23 Figure 3-10 shows the hourly cycle flow by direction along the A40. This shows there is a tidal flow of cyclists along the A40, with the predominant flow in the morning peak eastbound towards Oxford and the predominant flow in the evening peak being westbound towards Witney. In addition, this shows there are increased levels of cycling in June when the weather is warmer and clearer, and there is increased daylight.

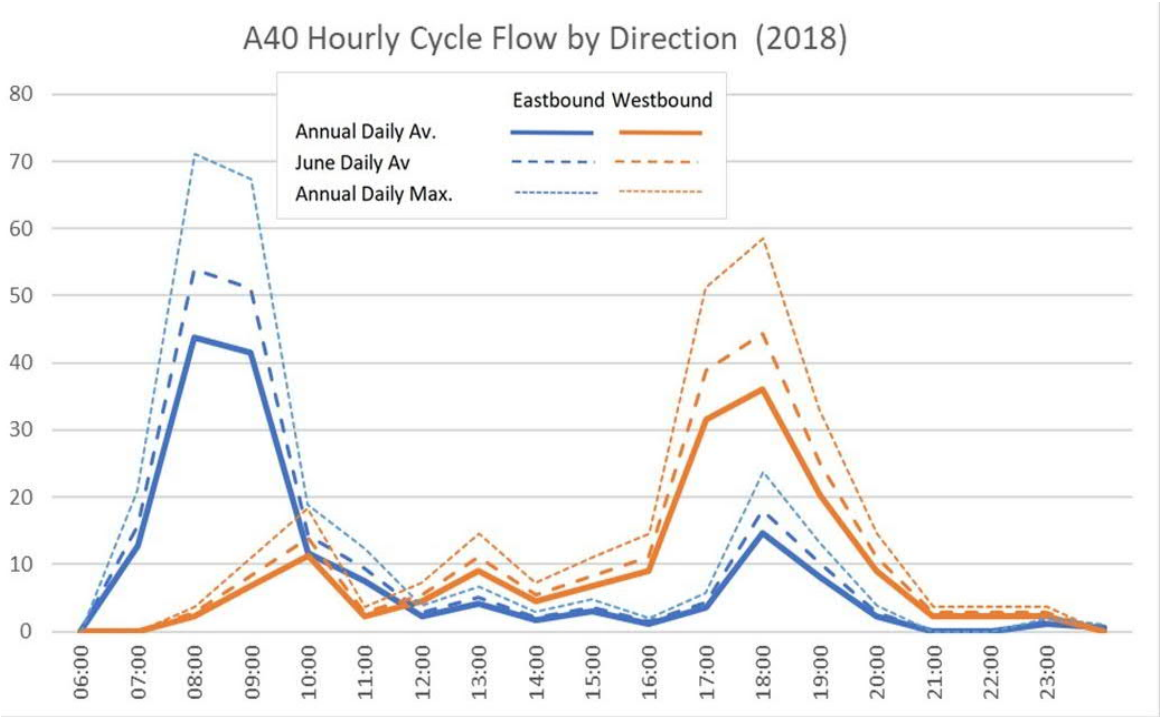


Figure 3-10 A40 Hourly Cycle Flow by Direction (2018)

Source: OCC

3.3.24 Figure 3-11 shows the recorded daily cycle flow on the A40 East of Cassington, towards Oxford between 2005 – 2018. Over this period, the number of cyclists along the A40 have increased significantly, more than doubling. This shows that in 2018 whilst the average number of cyclists per day was 278, this increased to 364 in June, and the highest daily maximum being 461 cyclists. This shows there is potential to further increase the number of cyclists using the A40, given the current usage levels.

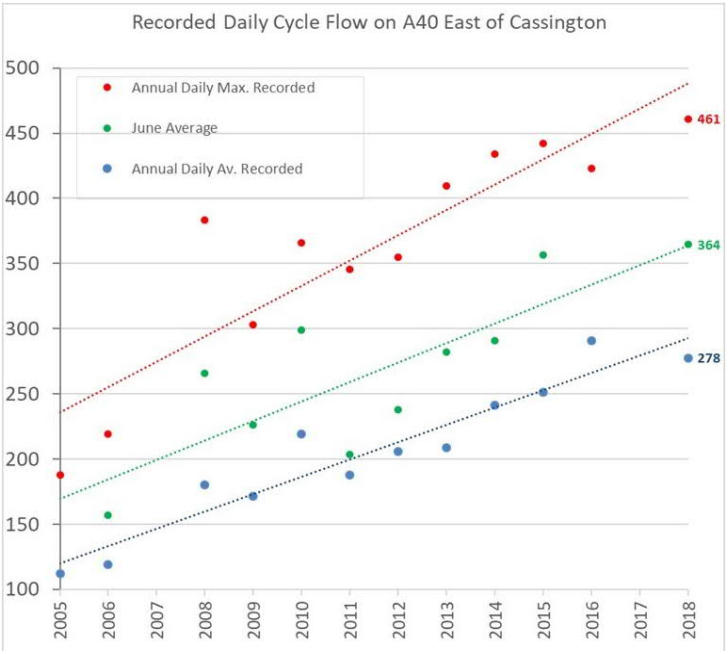


Figure 3-11 Recorded Daily Cycle Flow on A40 East of Cassington

Source: OCC

3.3.25 Figure 3-12 shows the distribution of weekday cycling by time of day. This shows that there is a highly peaked pattern aligned to the weekday commuter peak periods. As would be expected, the dominant movement in the AM peak is eastbound, and in the PM peak the dominant movement is westbound, as also seen in Figure 3-10.

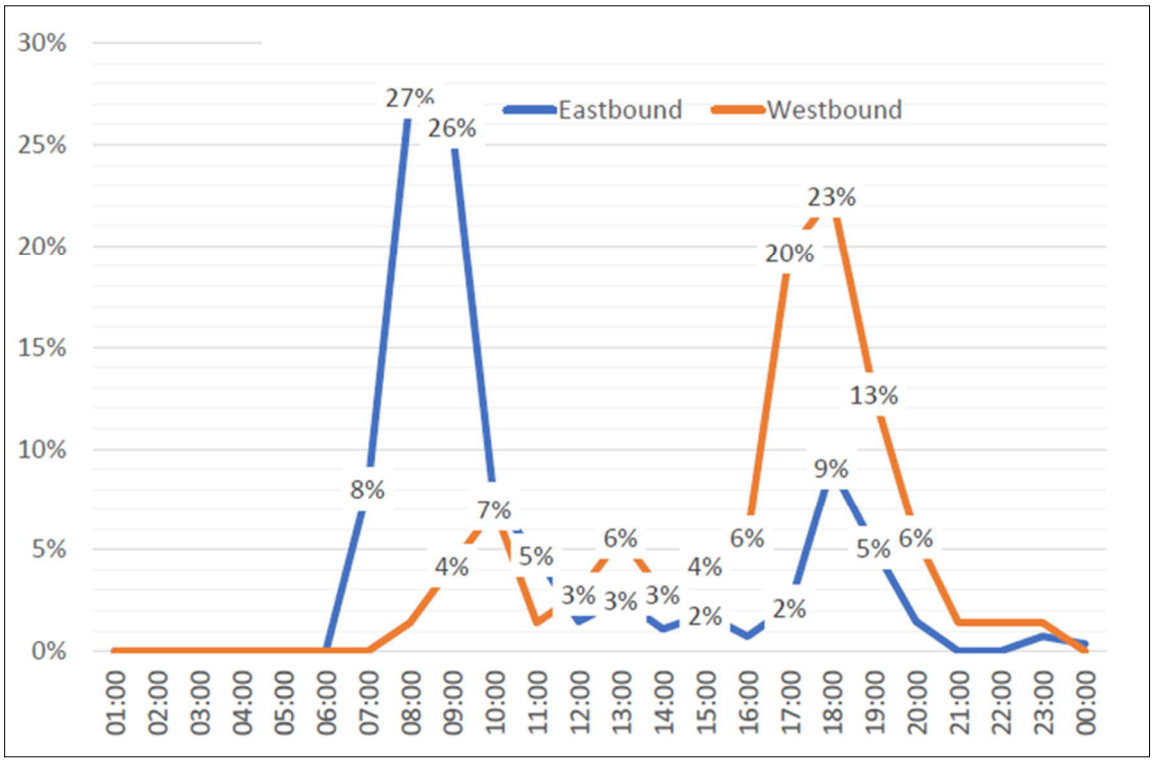


Figure 3-12 Distribution of Cycle Flow by Time of Day

Source: A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision

3.3.26 The Propensity to Cycle Tool (PCT) has been used to demonstrate cycling commuting demand in the area. It should be noted that the tool is based on 2011 Census data. Figure 3-13 shows the PCT estimate of cyclist flows on the A40 align well with the observed cycle count data as discussed above.

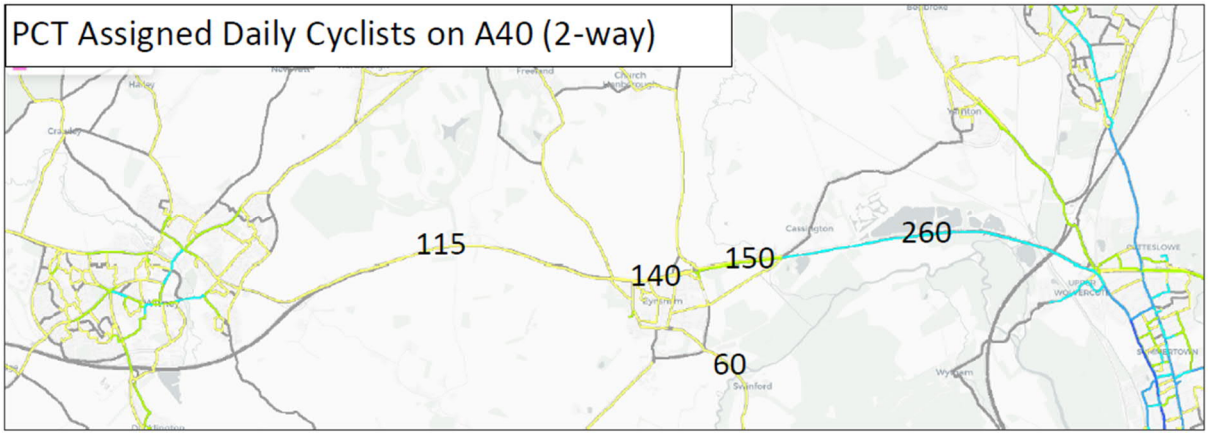


Figure 3-13 PCT Assigned Daily Cyclists on A40 (two-way), 2019

Source: A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision

3.3.27 As seen in Figure 3-14, the PCT at a LSOA level indicates that there is limited cycling commuting demand along the A40 corridor and in Witney (4-6%), whereas the general Oxford area shows significantly higher levels of demand, ranging between 15-29%. The figure also shows the location of strategic housing allocations, highlighting the potential to increase the percentage of commuters cycling to work across the A40 Corridor. It is to be noted that the PCT provides an indicative O-D pattern of commuting trips only and it doesn't include non-commuting trips such as leisure trips.

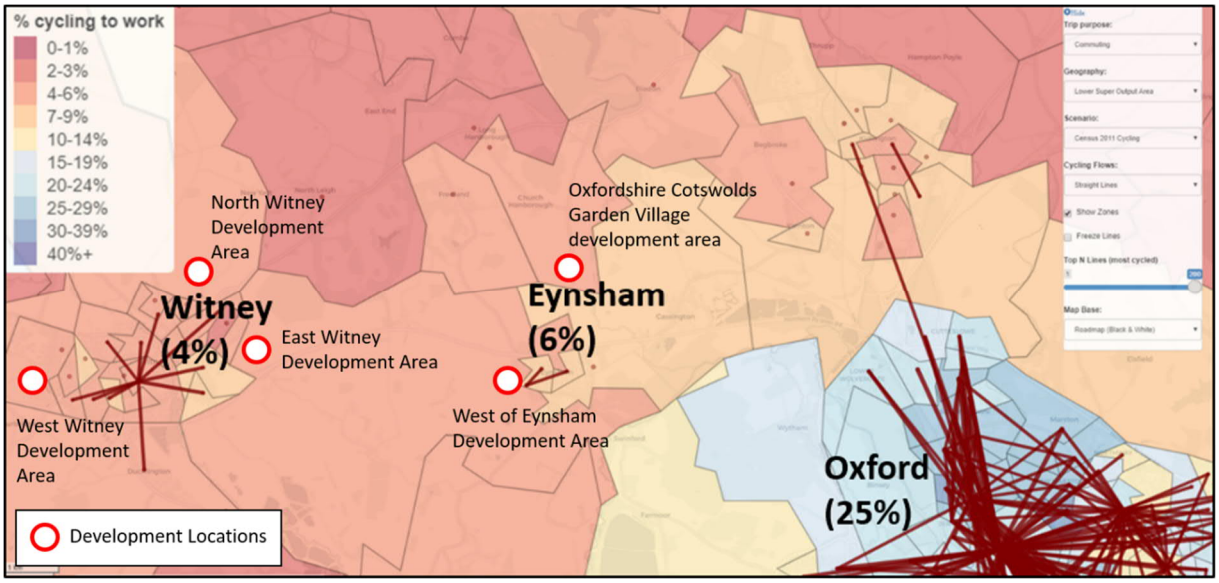


Figure 3-14. Census 2011 Cycle to Work Demand (LSOA Level)
Source: Propensity to Cycle Tool

3.3.28 The Propensity to Cycle Tool (PCT) has been used to demonstrate the high cycle demand under different scenarios. Figure 3-15 demonstrates the potential cycle demand in the area around the A40 corridor in the "Go Dutch" scenario; the propensity to cycle if the area had the same infrastructure and cycling culture as the Netherlands (but retained its hilliness and commute distance patterns)[13]. Cycle commuting demand significantly increases in the area, now at around 15-29%, although there are still no O-D desire lines along the A40 corridor as there were none in the baseline. It is possible that the distance between the urban centres along the A40 corridor, such as between Witney and Oxford (around 18km), is a deterrent (according to Google Maps travel planner, it would take around 45 minutes to cycle between Witney and Duke's Cut using the A40). The substantial housing proposed along the A40 corridor (as discussed in previous sections) will generate new cycling trips along sections of the A40 corridor (such as from new development at Eynsham and Witney to Oxford).

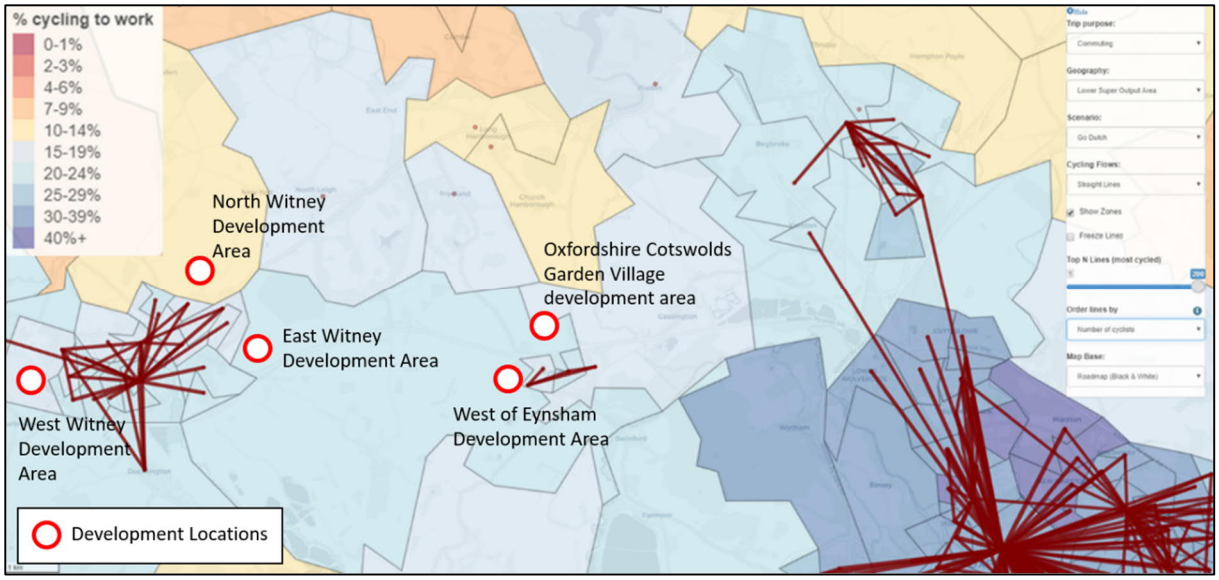


Figure 3-15. Potential Cycle to Work Demand: Go Dutch Scenario (LSOA Level)
Source: Propensity to Cycle Tool

[13] Lovelace, R., Goodman, A., Aldred, R., Berkoff, N., Abbas, A. and Woodcock, J. (2016). The Propensity to Cycle Tool: An Open Source Online System for Sustainable Transport Planning. Journal of Transport and Land Use, 10(1). Center for Transportation Studies. Available at: https://arxiv.org/abs/1509.04425

3.3.29 There are a number of public rights of way routes in the area, including the promoted route running south of the A40 corridor and connecting Oxford, Wytham, Swindon, Eynsham, and South Leigh (Figure 3-16). Footpaths connect Witney with High Cogges, providing crossing over the A40 via the Stanton Harcourt Rd bridge. Footpaths also connect South Leigh with the A40 at Hill Farm. In Eynsham, there are two promoted crossings over the A40: one uncontrolled crossing with a protected island just west of Tesco Express; and one uncontrolled crossing with no pedestrian facilities about 350 metres west of Eynsham Roundabout. There are no controlled crossings along this stretch of the A40. As part of the A40 Dualling scheme, new shared use paths are proposed alongside the A40, set back from the road. The addition of these routes will create a more comprehensive network of walking and cycling routes along the A40 Corridor and therefore should encourage greater use of active travel.

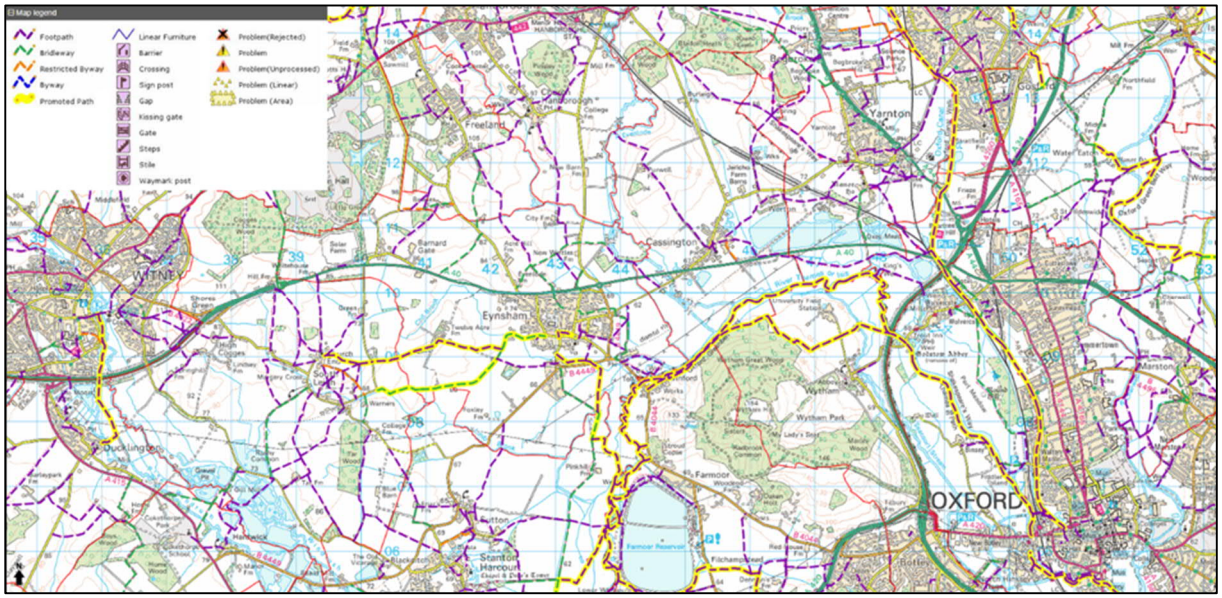


Figure 3-16. Public Rights of Way
Source: OCC (2020)[14]

Travel/Traffic Patterns and Modal Share

3.3.30 Table 3-3 shows the modal share of commuting trips in Oxfordshire and West Oxfordshire from the 2011 Census. This analysis highlights that West Oxfordshire has almost 10% more residents driving to work than in comparison to Oxfordshire as a whole. Furthermore, in West Oxfordshire fewer people use the bus to get to work, with 7.1% of people using the bus in West Oxfordshire compared to 4.3% in Oxfordshire. Similarly, fewer people cycle to work in West Oxfordshire (3.0%) compared to Oxfordshire (4.9%).

3.3.31 The existing mode share split of West Oxfordshire identifies that over 60% of residents use a car to commute to work. Therefore, these individuals will certainly benefit from the A40 Dualling scheme which provides increased capacity along the key arterial route through West Oxfordshire.

Table 3-3 Modal Share of Commuting Trips in Oxfordshire and West Oxfordshire

Method of travel to work	Oxfordshire	West Oxfordshire
Work mainly at or from home[15]	7.2%	8.0%
Train	3.0%	1.9%
Bus, minibus or coach	7.1%	4.3%
Taxi	0.3%	0.1%
Motorcycle, scooter or moped	0.9%	0.8%
Car	61.6%	70.0%
Bicycle	7.1%	4.1%
On foot	12.3%	10.3%
Other method of travel to work	0.6%	0.5%

Source: Census 2011

[14] OCC Countryside Access Map: https://publicrightsofway.oxfordshire.gov.uk/Web/standardmap.aspx
[15] Usually this is not included, however considering the current COVID-19 impacts it is shown here to provide a context.

3.3.32 Figure 3-17 shows that 41% of car commuters (about 9,000 people) from the southern wards of West Oxfordshire travel to destinations which will or could use the section of A40 between Witney and Oxford. Commuting to Oxford makes up 16% of all car commutes from these wards (3,600 people), as seen in Figure 3-17. Car commuters from West Oxfordshire to Oxford have destinations across the city, reflecting the city's employment patterns, with concentrations in the city centre, Headington and Cowley areas.

3.3.33 Commuters' journeys using bus and coach services from southern West Oxfordshire, as seen in Figure 3-18, are more locally focused with 56% (980 people) travelling to other parts of Oxfordshire and 60% (1,050 people) in total travelling to destinations which could involve travel along the A40 between Witney and Oxford. Commuting to Oxford makes up 52% of all bus commuting from these wards (900 people). Bus commuting to Oxford is concentrated in the city centre with lesser numbers in West Oxford and Headington, reflecting bus service destinations.

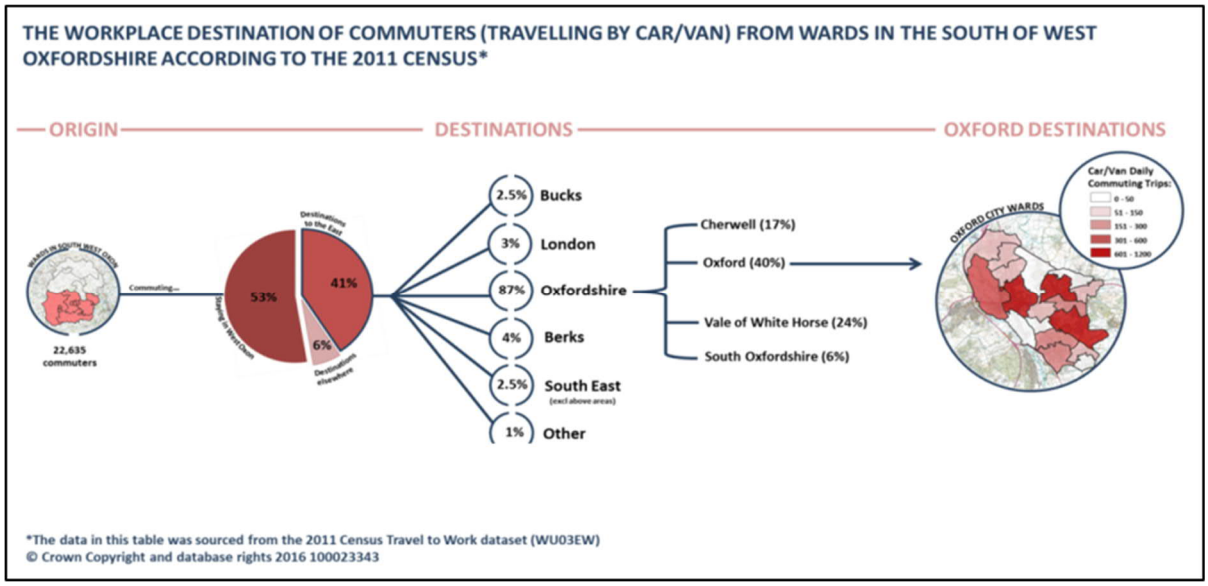


Figure 3-17. Car Commute Destinations of Southern West Oxfordshire Origins
Source: A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017); Census 2011 data

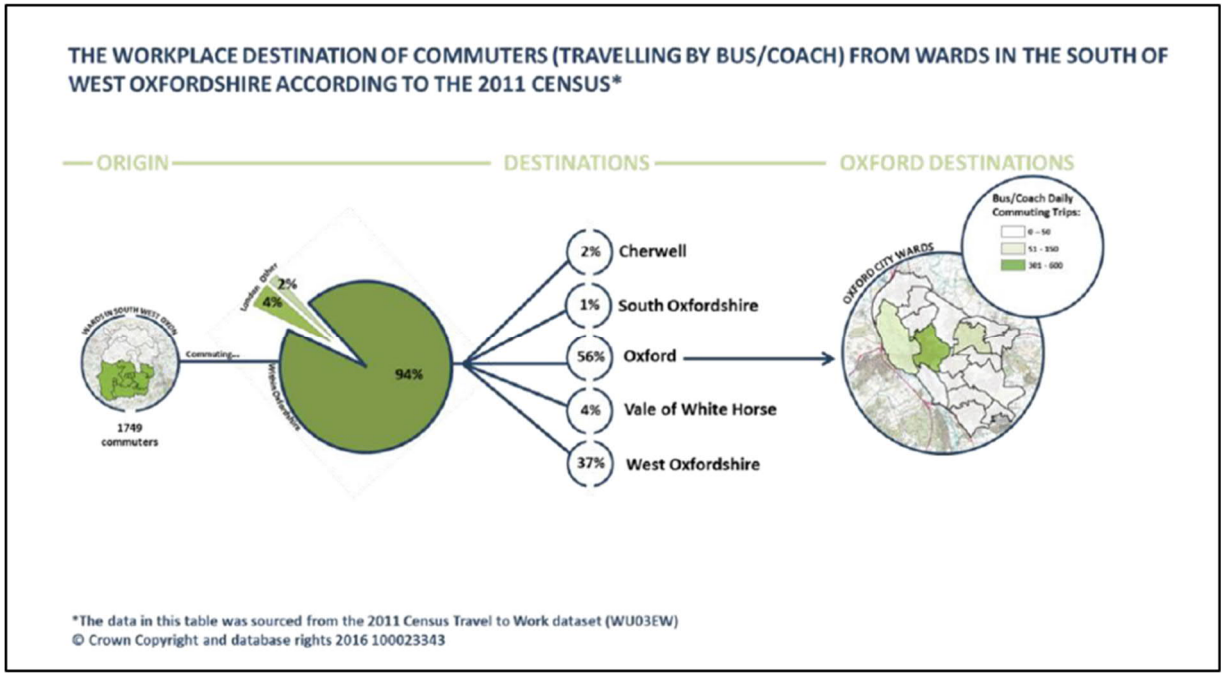


Figure 3-18. Bus Commute Destinations of Southern West Oxfordshire Origins
Source: A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017); Census 2011 data

Figure 3-19. Origins and Destinations of A40 Traffic

Source: A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017); Oxfordshire Strategic Traffic Model (2013 Base Year)

3.3.34 ANPR surveys undertaken in February 2020 have been used to assess the travel patterns along the A40 corridor in the AM and PM peak periods. Figure 3-20 below shows the results of Site 1 which is located west of Eynsham. This shows that eastbound in the AM peak, 51% traffic from west of Witney continues along the A40 to Duke's Cut. At the Lower Road roundabout (Eynsham), 10% of vehicles turn off the A40 to travel north towards the A4095, A44, Bladon village and Hanborough station, and 15% travel south onto the B4449 which provides access to Eynsham as well as onwards connections towards Botley and Oxford. Further along at the Cassington signals, 9% bear left onto Eynsham Road into Cassington village. Figure 3-21 shows that from the A40 near Wolvercote, 21% of trips travel south at the Wolvercote Roundabout along the A4144. A further 58% of traffic continues along the A40 towards Cutteslowe, with 26% continuing along the A40 to Wheatley.

3.3.35 The recent ANPR surveys reaffirm that a significant number of trips originate or end in West Oxfordshire.

- Therefore, any intervention focused on the A40 from Witney to Oxford will benefit the residents of West Oxfordshire; specifically, the A40 Dualling scheme will provide increased capacity along the A40 and provide quick access to the Eynsham Park and Ride. This will provide benefits to the residents of West Oxfordshire such as improving travel times, reducing congestion and others.

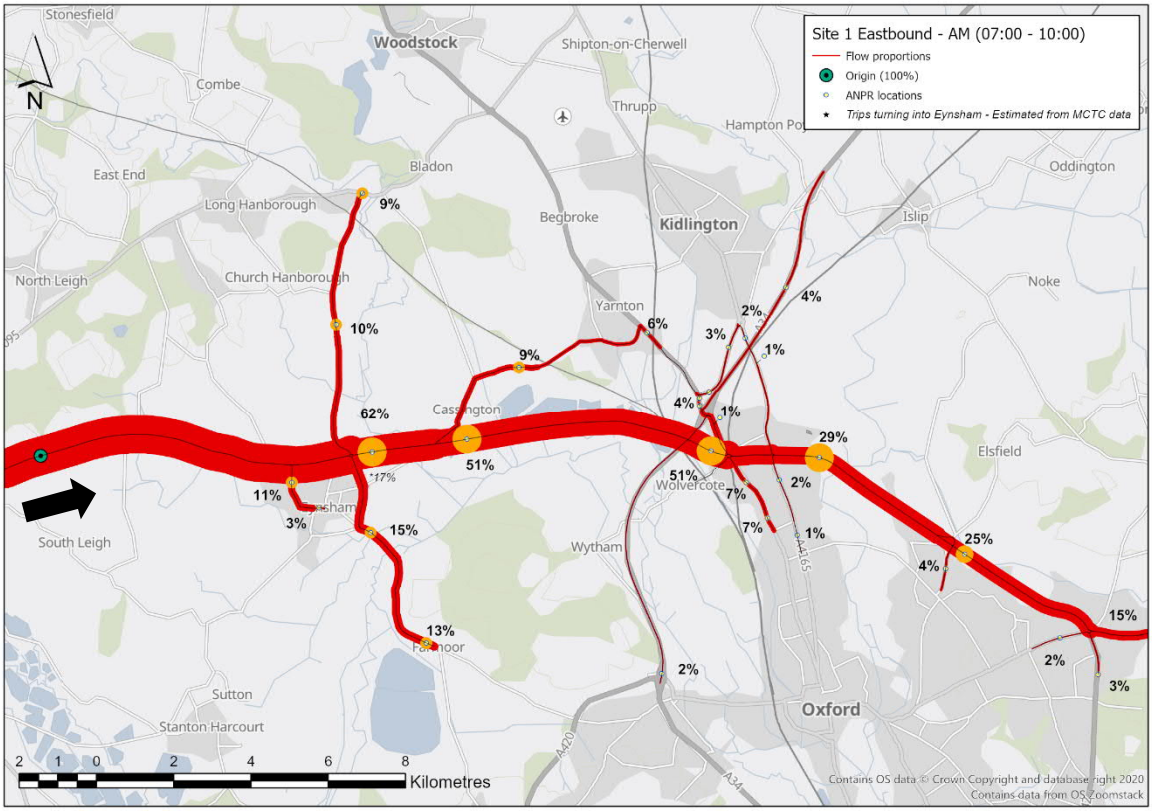


Figure 3-20 Traffic Patterns along the A40 from west of Eynsham – Eastbound in the AM peak period

Source: AECOM analysis based on ANPR surveys undertaken in February 2020

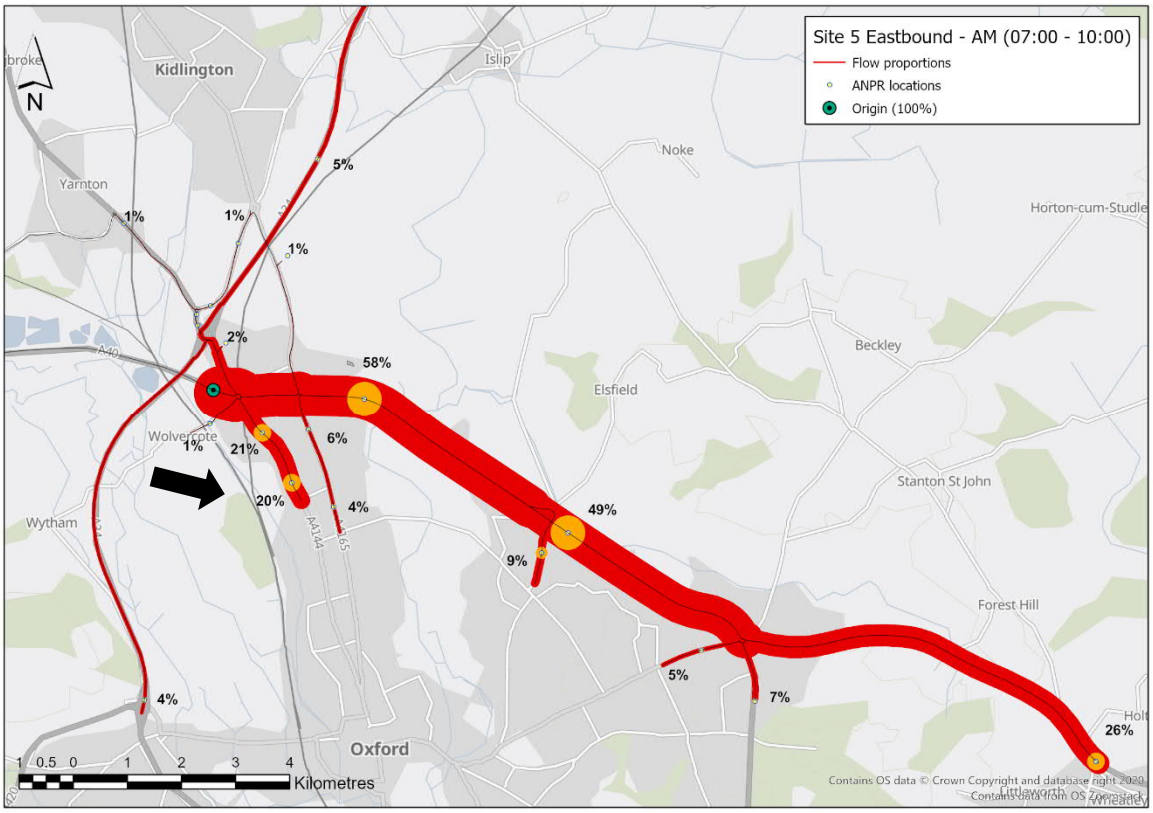


Figure 3-21 Traffic Patterns along the A40 from Oxford – Eastbound in the AM peak period

Source: AECOM analysis based on ANPR surveys undertaken in February 2020

Journey Times, Traffic Flows and Congestion Issues

3.3.36 Figure 3-23 and Figure 3-24 show the journey time variability along the A40 in the AM and PM peak hours (Figure 3-22 shows the locations mentioned in these two figures). Figure 3-23 shows the journey time variability eastbound along the A40 in the morning travelling towards Oxford. This shows that there is greater variability towards the west of the study area, especially between Hill Farm and Lower Road and between Cassington Road and Wolvercote. In the PM peak, as Figure 3-24 shows, the variability has a significant range, and the greatest variation is between Wolvercote and Cassington Road where journeys can vary from 3.5 minutes to 18.5 minutes. This data shows that there is poor journey time reliability along the A40 between Witney and Oxford.

3.3.37 Low journey time reliability on the A40 also negatively affects bus service reliability, and as a result can discourage operators from running services along this vital route. At present, the bus operator will only run limited services along the A40 to Oxford North and Oxford East as they cannot guarantee the quality of service and buses meeting the schedule beyond this. Through implementation of the A40 Corridor schemes journey time reliability along the A40 will dramatically improve and as a result unlock more frequent and faster bus services. This will then encourage greater use of the bus and lead to mode shift to more sustainable modes along the A40 Corridor.

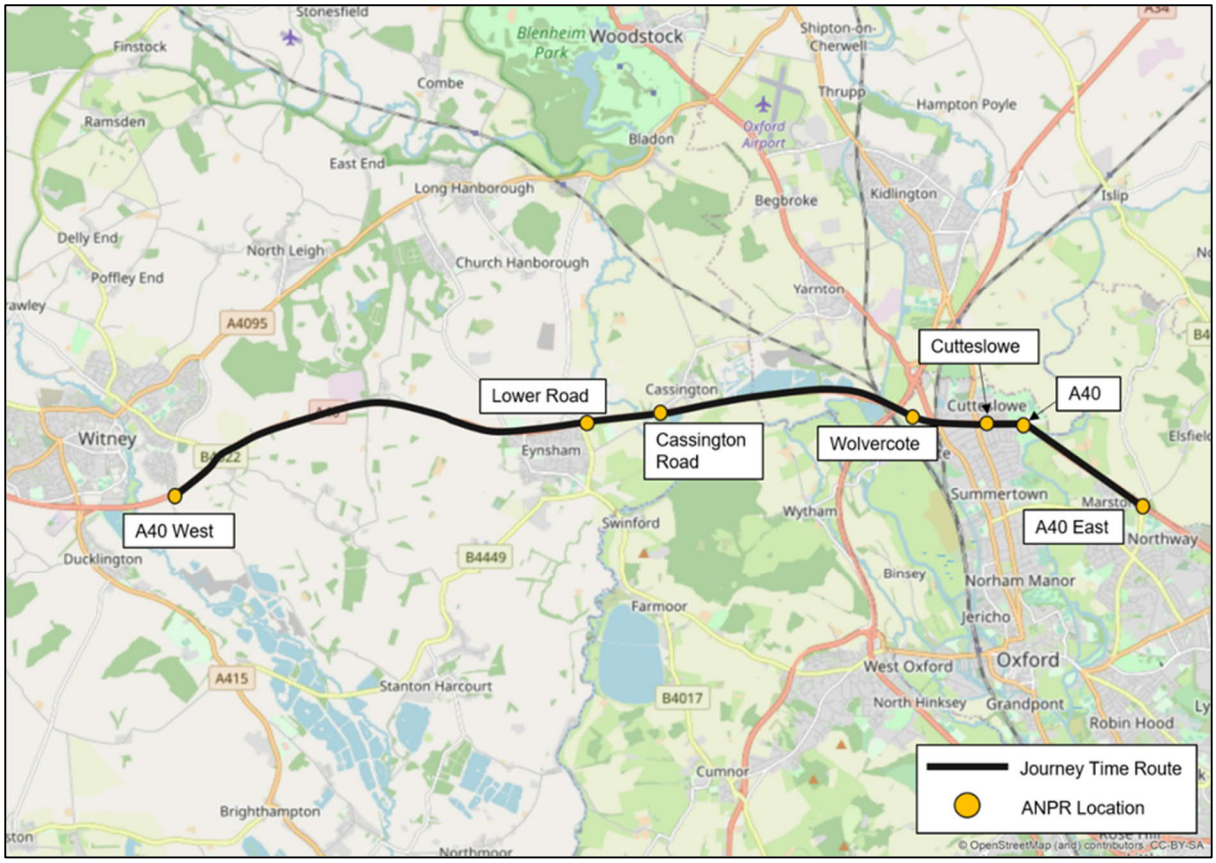


Figure 3-22 Journey Time Route – A40

Source: Adapted from OCC 2020 survey

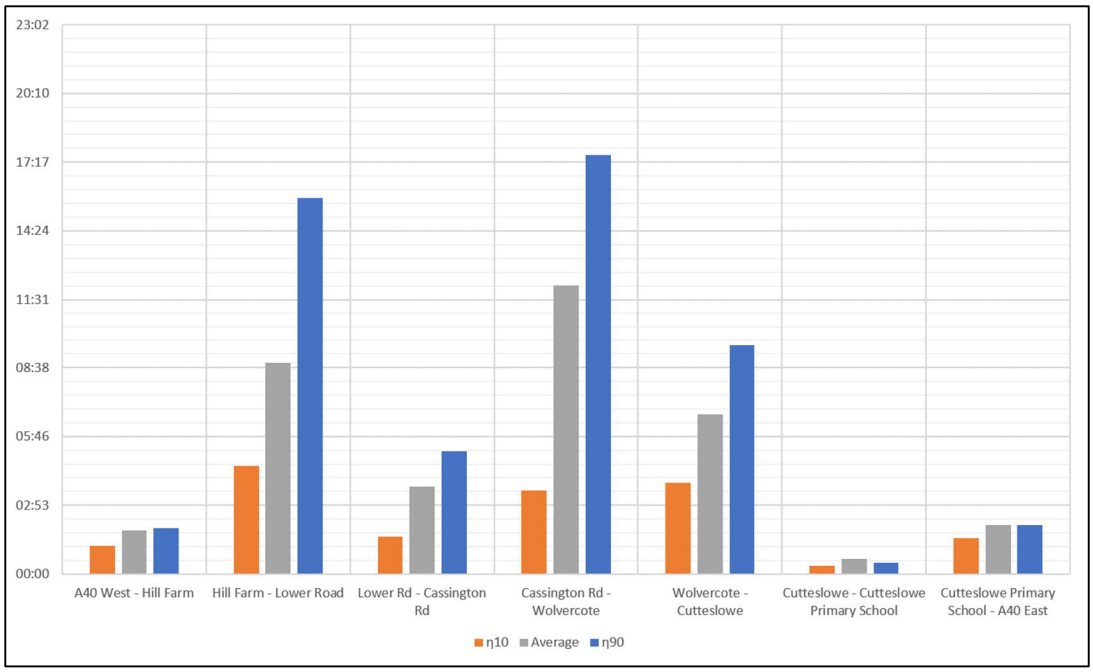


Figure 3-23 Journey Time Variability along the A40 in the AM Peak Eastbound

Source: AECOM analysis based on ANPR surveys undertaken in February 2020

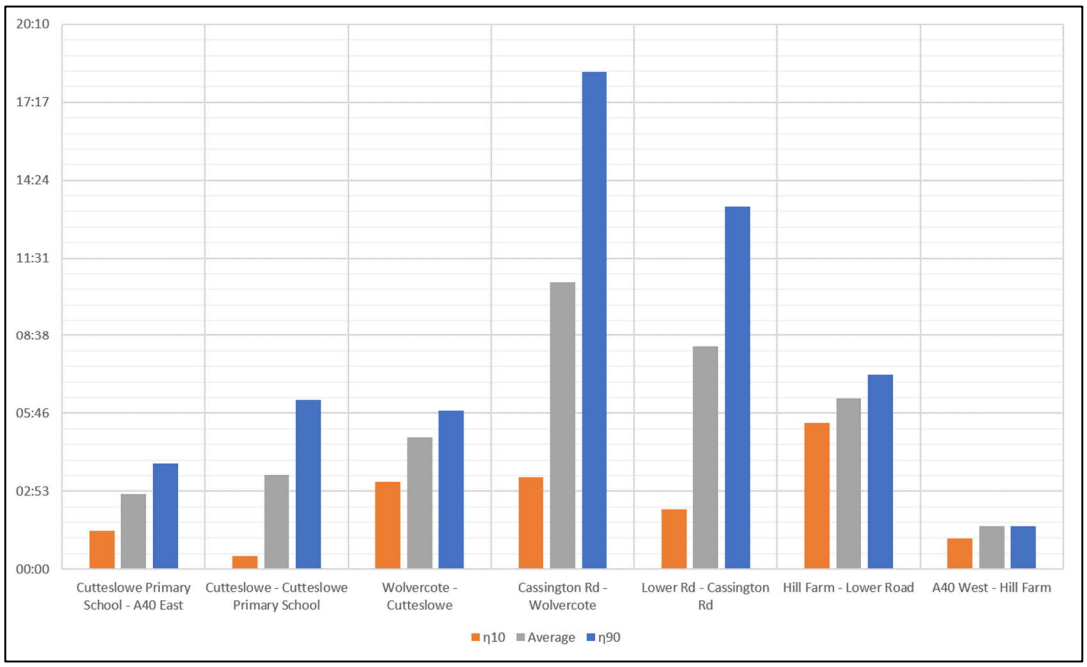


Figure 3-24 Journey Time Variability along the A40 in the PM Peak Westbound

Source: AECOM analysis based on ANPR surveys undertaken in February 2020

3.3.38 Figure 3-25 and Figure 3-26 below show the average congestion along the A40 in the AM and PM peaks respectively. In the AM peak, slower traffic builds up along the A40 near Eynsham and therefore leads to congestion and long queues. In the PM peak, a longer queue of slower traffic builds up at the Lower Road roundabout creating a long queue of traffic, which extends beyond the Cassington signals. Slow traffic is also found in both directions near Eynsham. Furthermore, Figure 3-27 shows congestion north of Oxford later in the AM Peak, where there is slow traffic between the Wolvercote and Cutteslowe roundabouts, as well as on all arms of the Wolvercote roundabout.

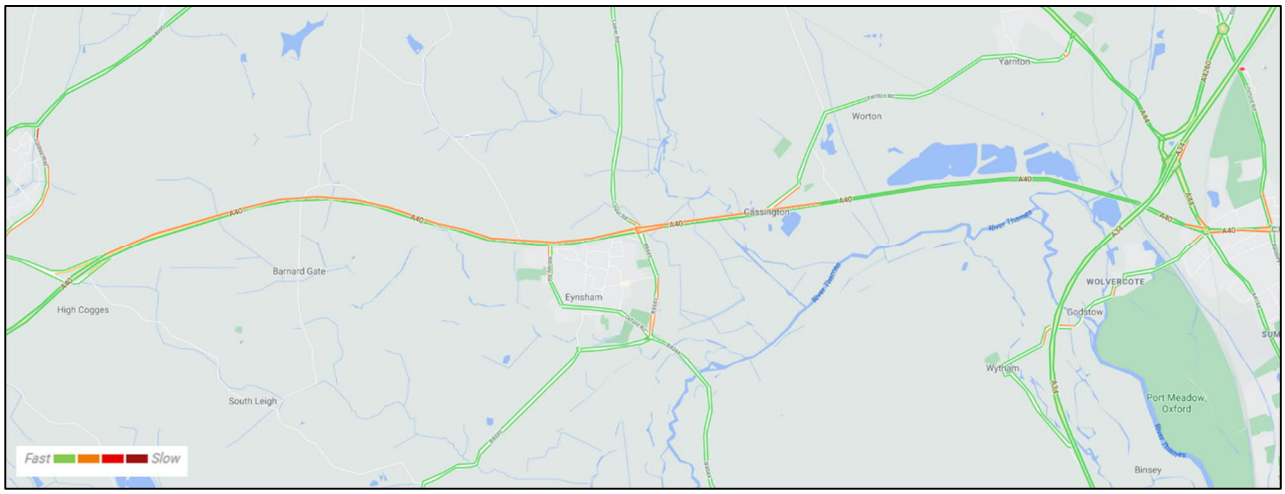


Figure 3-25 Congestion along the A40, average AM Peak (Monday, 7:10am)

Source: Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license agreement with Google

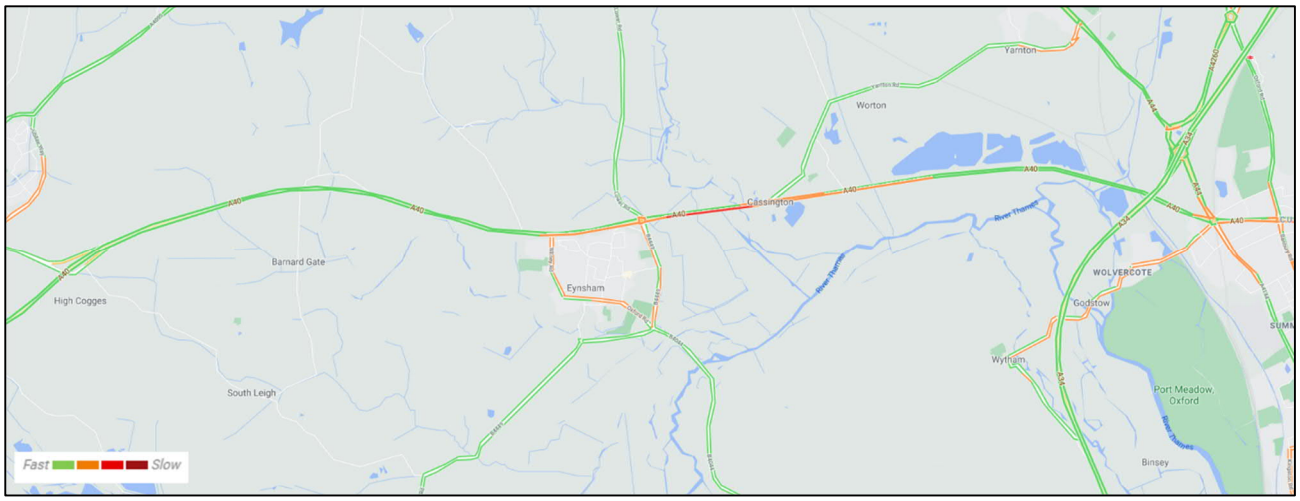


Figure 3-26 Congestion along the A40, average PM Peak (Thursday, 17:15pm)

Source: Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license agreement with Google

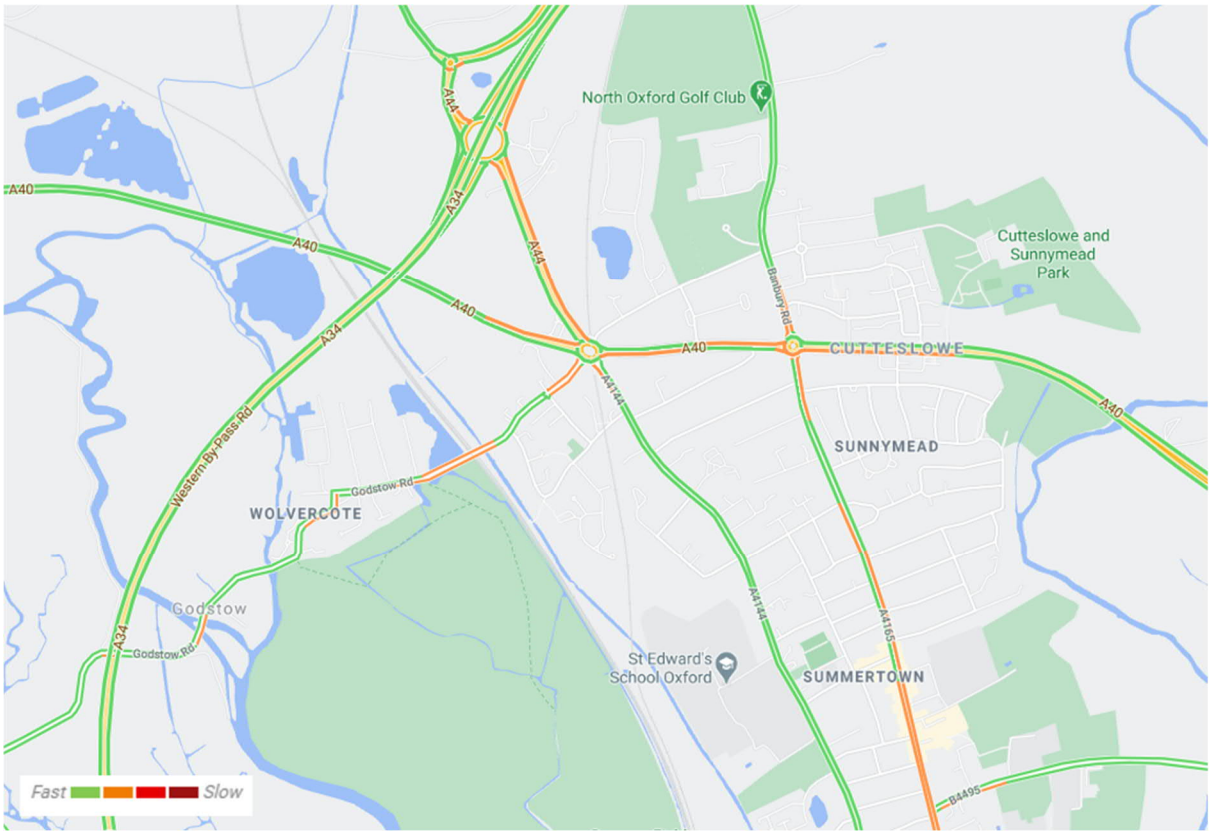


Figure 3-27 Congestion in North Oxford, average AM Peak (Monday, 08:00am)

Source: Google Earth Pro™ imagery in the form of Google Map™ and Google Streetview™ have been used, unmodified, within this document. This imagery has been used within the extents of the AECOM license agreement with Google

3.3.39 Traffic volumes along the A40 and surrounding road network have been examined with key results shown in Table 3-4. This information has been taken from the ANPR surveys undertaken in February 2020 on behalf of AECOM.

3.3.40 Table 3-4 shows that just east of Witney, over 27,000 vehicles a day use the A40. The average daily traffic along the A40 increases east to west towards Witney. However, due to the presence of queues near some of the survey locations on the day of the survey, it is likely that the total number of vehicles observed is higher than shown below. For example, at the A40 West site traffic is free flowing and every vehicle will be captured. At the A40/Eynsham Road junction queues often form in the AM and PM peaks and as such readings from the ANPR will only capture the vehicles which managed to access the junction and therefore may not account for the entire queue.

Table 3-4 Traffic Flows on A40 and Surrounding Roads

Name	Source	Year	AM (08:00 - 09:00)	PM (17:00 - 18:00)	Daily Traffic
			Two-Way Traffic	Two-Way Traffic	Two-Way Traffic
A40 West (near Hill Farm)	AECOM	2020	1,455	2,460	27,123
Lower Road	AECOM	2020	642	693	-
A40/Lower Road Roundabout	AECOM	2020	1,423	1,434	23,878
A40/Eynsham Road (Cassington)	AECOM	2020	881	854	19,076
A40 East (near Duke's Cut)	AECOM	2020	881	771	18,835
A4095	AECOM	2020	1,187	1,297	-
Witney Road	AECOM	2020	501	462	-
B4044 at Swinford Toll Bridge	AECOM	2020	1,013	1,152	-

(- denotes daily two-way traffic was not available)

Source: AECOM analysis based on February 2020 ANPR Surveys

3.3.41 Based on a above analysis and local understanding of the congestion issues along the A40 corridor, these issues are caused by a combination of:

- Junction capacity limits at Wolvercote Roundabout, Eynsham Roundabout, Cassington traffic lights, and Witney Road traffic signals. Queueing can be observed at these junctions throughout the day; and
- Underlying link capacity issues. At present these are masked to a great extent by the junction capacity issues but are witnessed in the PM peak for westbound traffic between Eynsham and Shores Green.

Collisions

3.3.42 A Collision Investigation Study[16] was undertaken by AECOM. The study shows a decrease in the number of year-on-year collisions over the five years between 2013 and 2018. Overall, 86 personal injury collisions occurred during the 69-month study period from 01/01/2013 to 30/09/2018. A single collision resulted in a fatality, 20 collisions resulted in serious injury severity and 65 collisions resulted in slight injury severity. The findings from the Collision Investigation Study found that the overwhelming majority of collisions were due to behaviour factors and not road geometry factors.

3.3.43 Figure 3-28 and Figure 3-29 show the location of crashes along the A40 and surrounding road network for the past 5 years (2015-2019), extracted from the online CrashMap tool. This shows that there are more collisions to the east of Eynsham towards Duke's Cut. There does not appear to be a pattern to the severity of the accidents along the A40, however more severe accidents tend to occur at junctions. There are several clusters of accidents along the A40 which could be considered a hot spot. There is a clear hot spot of accidents near Hill Farm, east of Witney, most likely due to the road layout transitioning from a dual carriageway to a single carriageway and vehicles having issues while merging. Additionally, north of Eynsham at the Cuckoo Lane junction and Lower Road roundabout there is a hotspot for collisions. This could be due to the lack of signalisation at these junctions resulting in less traffic regulation and increasing the likelihood of queues. Along the eastern section of the A40 (from Eynsham to Duke's Cut) collisions are spread across the length of the road which may be caused by the extensive queueing along this section. There has been a recent collision that resulted in multiple fatal casualties that occurred on the Wolvercote Rail bridge at Duke's Cut in October 2020. There are no details at present, and as this collision is recent it does not appear on the maps below. More information may be released following the inquest which will be held in March 2021.

3.3.44 The A40 Dualling scheme (in conjunction with other A40 schemes) will result in new layouts of junctions and carriageway therefore this will provide an opportunity to implement a safe design option to help reduce the collisions (such as by following design guidelines including Design Manual for Roads and Bridges and DfT's 'Cycle Infrastructure Design: Local Transport Note 1/20').

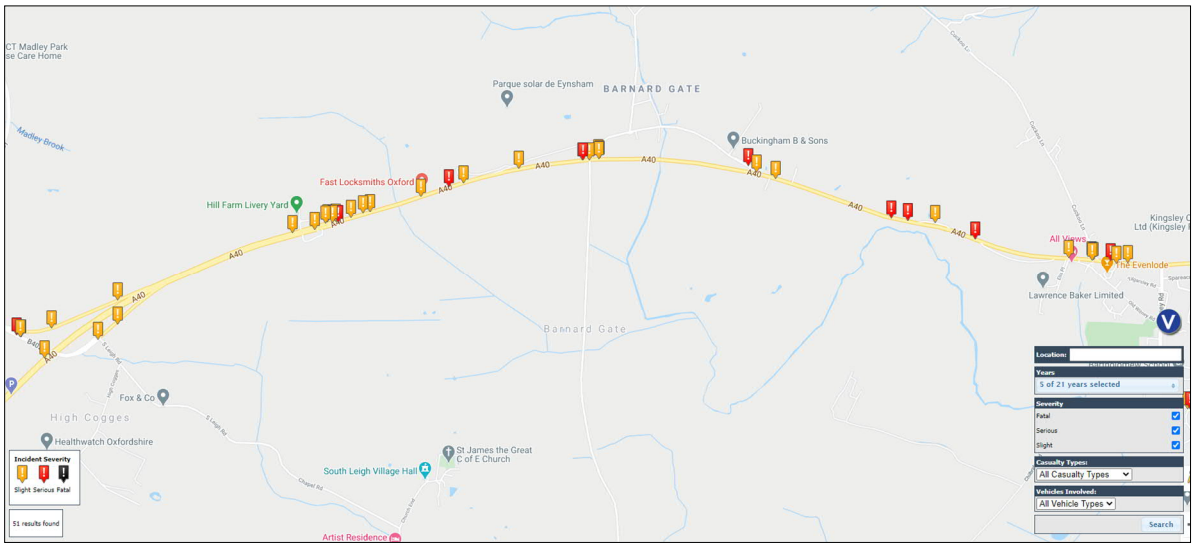


Figure 3-28 Location of Collisions along the A40 between Witney and Eynsham, 2015-2019

Source: Export from https://www.crashmap.co.uk/Search

[16] 2019, as part of the A40 Park and Ride and Bus Lane Scheme Transport Assessment

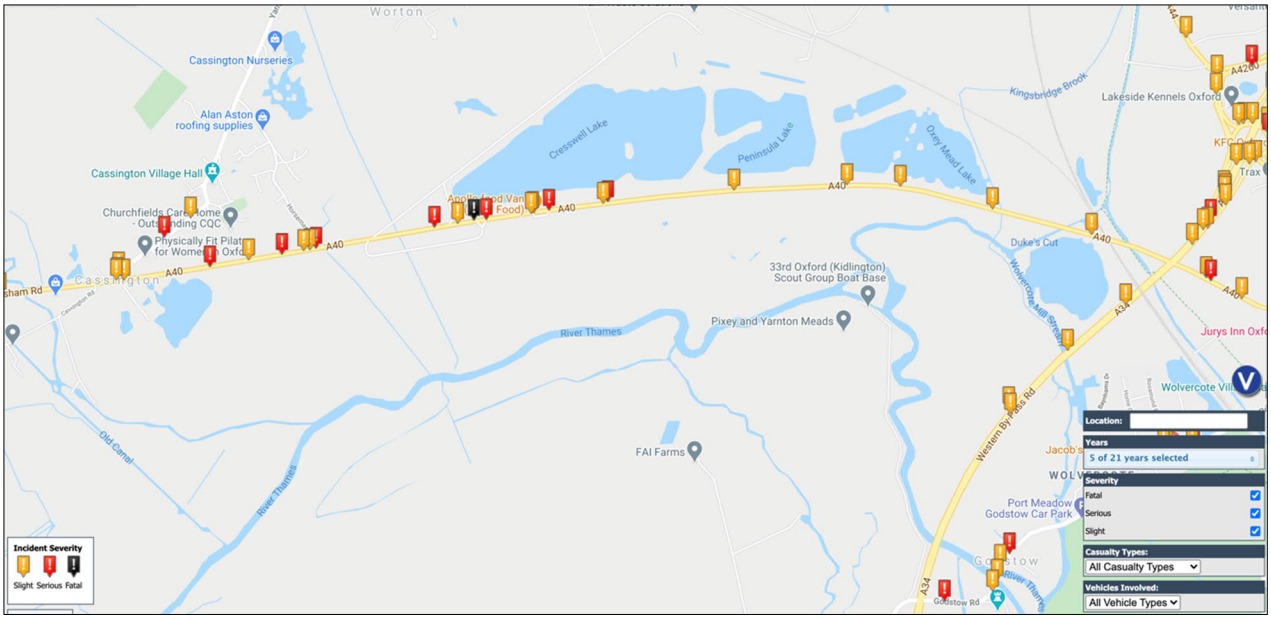


Figure 3-29 Location of Collisions along the A40 between Eynsham and Duke's Cut, 2015-2019

Source: Export from https://www.crashmap.co.uk/Search

3.3.45 Figure 3-30 below show collisions along the A40 where the vehicle involved was a cyclist for the period 2015 – 2019. This shows that there are a fairly low number of collisions involving cyclists, and collisions tend to occur at junctions rather than along the main carriageway. There are a cluster of collisions at the roundabout just east of Duke's Cut, and one of these was fatal. Over the past five years there has been one serious accident at the Lower Road roundabout and one serious accident at the Shores Green slip roads. The majority of collisions along the A40 involving cyclists have been slight in nature.

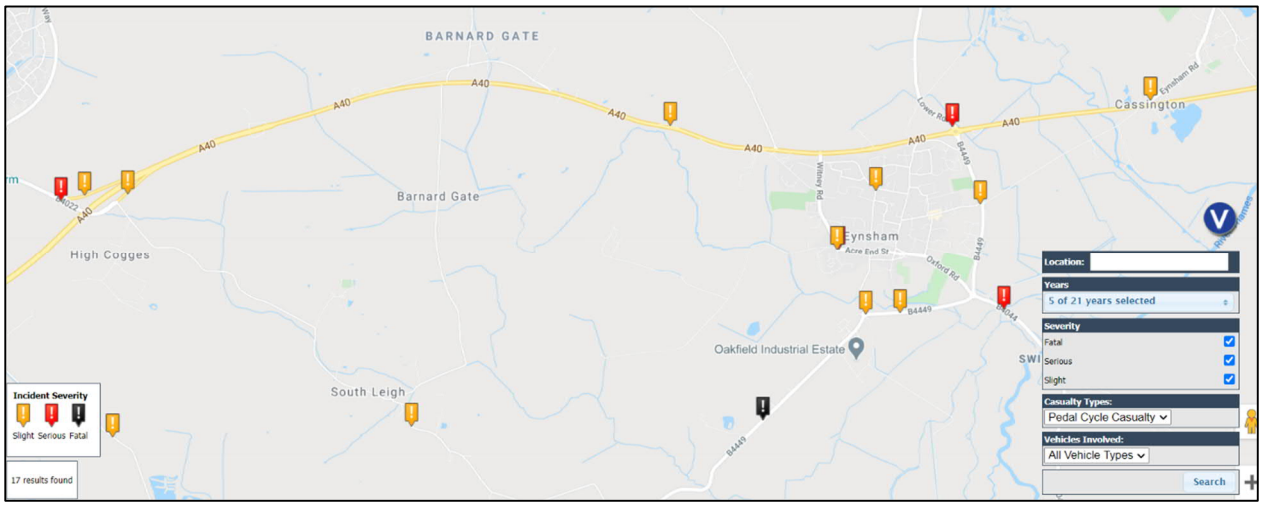


Figure 3-30 Location of Collisions involving Cyclists along the A40 between Witney and Eynsham

Source: Export from https://www.crashmap.co.uk/Search

3.3.46 As shown in Figure 3-31 there have been very few collisions involving pedestrians over the period 2015 – 2019, and none alongside the A40 Witney and Eynsham. There were no collisions east of Eynsham towards Witney hence why the map focusses on Eynsham to Duke's Cut. Notably, there has been one fatal collision involving a pedestrian along the A40 between Cassington and Duke's Cut. However, other factors were given as to the circumstances around the fatal accident that are not related to the road geometry or the environment. (A passenger of a parked vehicle, following an altercation with the driver, exited the vehicle under the influence of alcohol and stepped in front of a passing motorist) There have been no further collisions involving pedestrians along the A40. This could be due to low numbers of pedestrians using the shared path alongside the A40, but nonetheless the fatal collision highlights that it is paramount that the safety of the shared path needs to be improved.

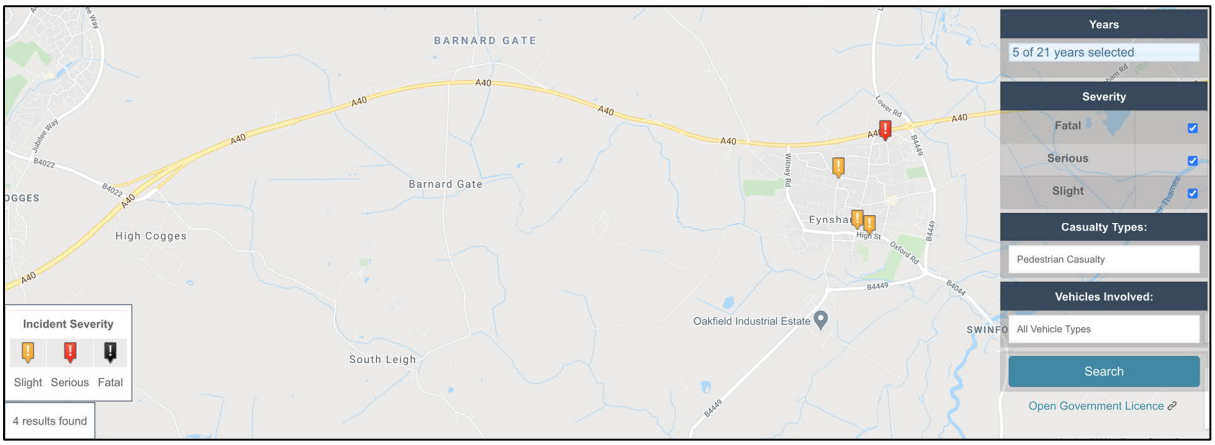


Figure 3-31 Location of Collisions involving Pedestrians along the A40 between Witney and Eynsham

Environment

3.3.47 The A40 corridor is partly located in an environmentally sensitive area, with an Air Quality Management Area (AQMA), Noise Important Areas, the Oxford Green Belt, and other ecological/landscape designations, such as the Special Areas of Conservation.

3.3.48 Figure 3-32 and Figure 3-33 outline the ecological designations in the wider area around the A40 corridor. Of special significance is the AQMA the whole of Oxford City (Figure 3-33). An AQMA is an area where, based on review and assessment of air quality, the local authority has judged that it is unlikely to achieve the national air quality objectives. As a result of exceedances of the annual mean Limit Value for nitrogen dioxide (NO_2), an AQMA was designated in Oxford in 2010.

3.3.49 Along the route of the proposed A40 Dualling, there are some locations which are likely to be impacted by changing air quality levels. These are as follows:

- Residential properties close to the A40 in Eynsham;
- Residential properties close to the A40 in Barnard Gate;
- Existing properties along the proposed route of A40 Dualling;
- Planned development at Salt Cross Garden Village; and
- Oxford AQMA.

3.3.50 Another ecological designation of significance is the Special Area of Conservation (SAC) located south of the A40 corridor around Duke's Cut and Lower Wolvercote (Figure 3-32). SACs are sites that have been adopted by the European Commission, and formally designated by the national government, to protect the habitats and species in the area. The level of protection afforded by the SAC status means that encroachment into the designated area by any transport improvement is unlikely to be permitted. In addition, the flora in this area would be potentially affected by air pollution from the A40.

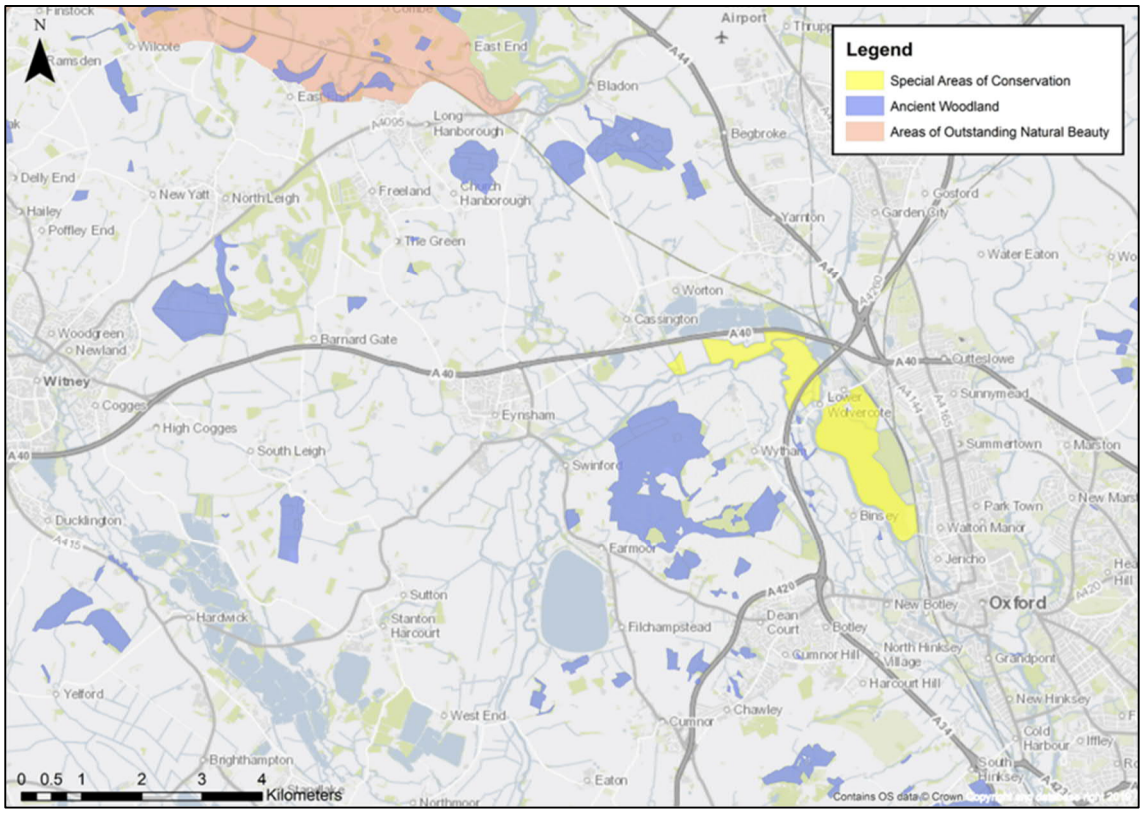


Figure 3-32. Special Areas of Conservation, Ancient Woodland, and Areas of Outstanding Natural Beauty
Source: Natural England Open Data (2019); DEFRA (2019); AECOM © Crown copyright and database right 2020

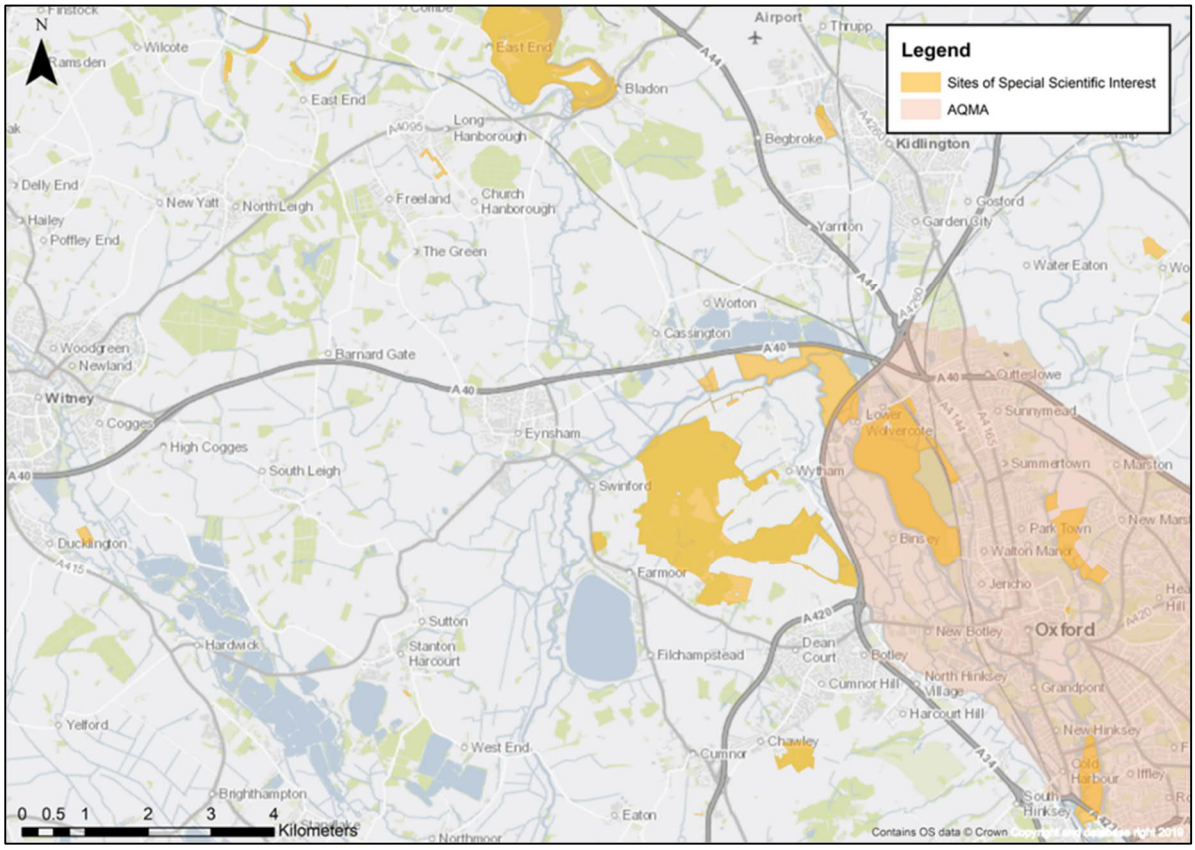


Figure 3-33. Air Quality Management Area and Sites of Special Scientific Interest
Source: Natural England Open Data (2019); DEFRA (2019); AECOM © Crown copyright and database right 2020

3.3.51 Noise Important Areas are the noise hotspots where the 1% of the population that are affected by the highest noise levels from major roads are located, according to the results of strategic noise mapping. Figure 3-34 demonstrates that several noise important areas are present along the A40 corridor, including in Eynsham and between Wolvercote Roundabout and Cutteslowe Roundabout. The Defra Noise Action Plan: Roads (2019) sets out that the relevant highway authorities are responsible for examining Noise Important Areas and forming a view about what measures, if any, might be taken in order to assist with the implementation of the Government's policy on noise.

3.3.52 Furthermore, it is important to highlight any noise sensitive receptors along the A40 which may be impacted by changing noise levels due to the A40 Dualling scheme. This includes:

- Residential properties close to the A40 in Eynsham;
- Residential properties close to the A40 in Barnard Gate;
- Eynsham Motocross Track;
- Planned development at Salt Cross Garden Village; and
- Existing properties along the proposed route of A40 Dualling.

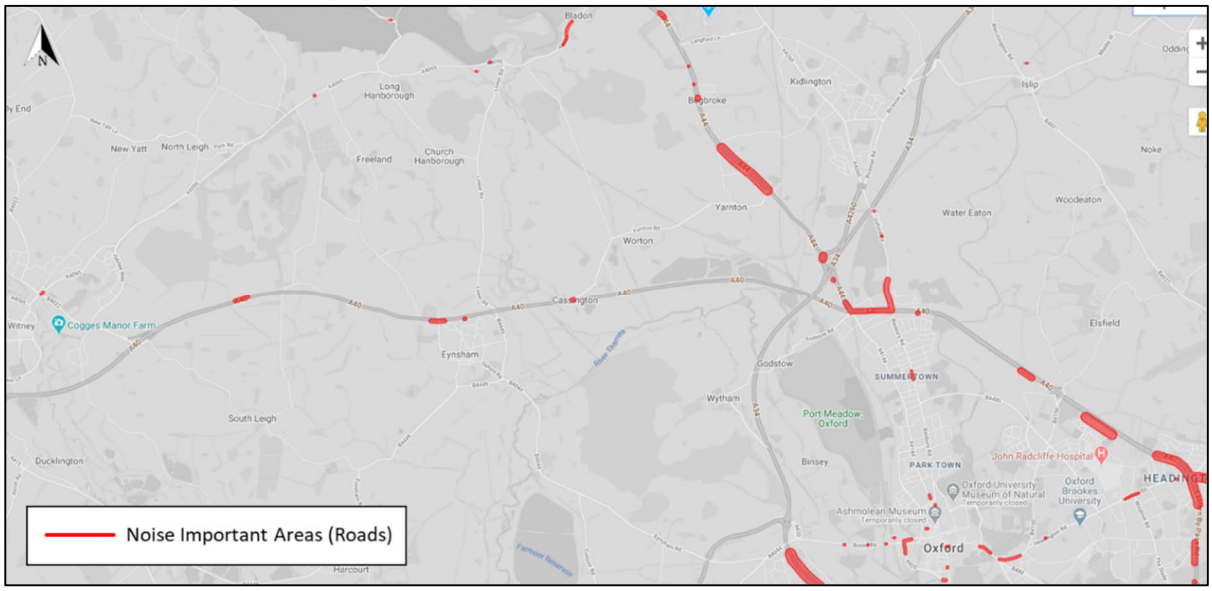


Figure 3-34. Noise Important Areas (Roads)
Source: www.extrium.co.uk

3.3.53 Figure 3-35 shows the flood risk from rivers or sea along the A40. This shows that the majority of flood risk along the A40 is near and east of Eynsham towards Oxford. Near to the proposed route of the A40 Dualling, there are areas of medium and high flood risk, following Chill Brook, a tributary of the River Thames. This flood risks needs to be considered as part of the design of the A40 Dualling, as it could lead to challenges with the design.

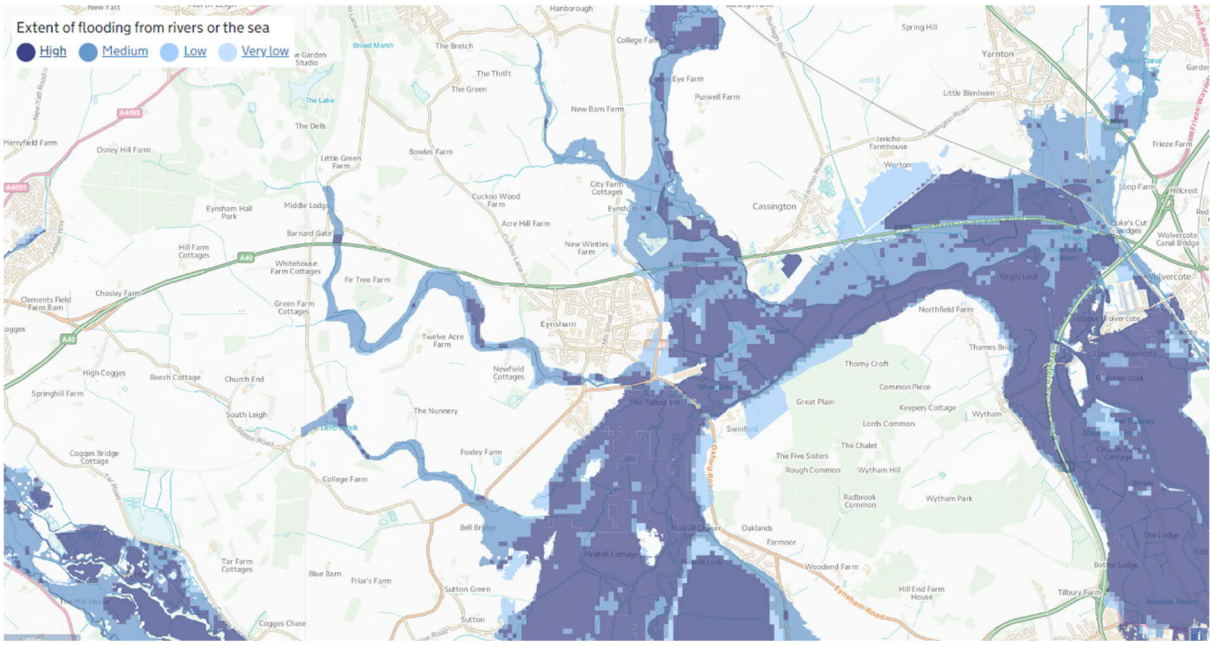


Figure 3-35 Flood risk along A40

Source: https://flood-warning-information.service.gov.uk/long-term-flood-risk/map

3.3.54 The visual impact of the proposed A40 Dualling on local receptors should also be considered. It is likely the alignment of the A40 Dualling will have visual impacts upon:

- Residential properties close to the A40 in Eynsham;
- Residential properties close to the A40 in Barnard Gate;
- Planned development at Salt Cross Garden Village;
- Existing properties along the proposed route of A40 Dualling; and
- Footpaths near to the A40 between Witney and Eynsham.

3.3.55 Additional environmental constraints around the A40 corridor include:

- The entire length of the A40 from Eynsham Roundabout to the Oxford Ring Road lies within the Oxford Green Belt. This includes the village of Cassington;
- Immediately to the west of the A34 there are a series of bridges over the Oxford Canal, Oxford-Banbury/Worcester railway and Duke's Cut (a canal link connecting the Oxford Canal and River Thames) where the verge is limited to that necessary for the provision of the footway/cycleway (0.7 km). Any on-line improvement to the route would need these bridges to be either widened, supplemented or replaced. This would add considerably to the cost and engineering complexity of such a scheme;
- The Cassington Gravel Works form the northern boundary of the A40 for most of the section of road between Cassington and Duke's Cut. The current workings, including the materials processing plant, are to the western end of the site around the line of the old Oxford-Witney railway, which has been converted into a haul road for the site. The gravel works (current and worked out) cover the entire area between the A40 and the Cotswold rail line and could present an important constraint to any off-line transport improvements; and
- It is believed that there is the site of a medieval village adjacent to the A40 in this area, although its exact location is not known.

3.3.56 Addressing these issues will need to take into account Policy 1 of OCC's LTP4, which states that the county will work to ensure that the transport network supports sustainable economic and housing growth in the county, whilst protecting and where possible enhancing its environmental and its creative, cultural, heritage and tourism assets, and supporting the health and wellbeing of its residents.

3.4 Future Conditions

3.4.1 In order to effectively appraise the A40 Dualling scheme, it is imperative to understand the future context and situation in which the schemes will sit. As part of this, the following section provides an overview of development proposals, and forecasted transport conditions.

Future Growth

3.4.2 The population in West Oxfordshire is expected to grow in the future. The West Oxfordshire Local Plan 2031 commits to delivering 13,200 new homes between 2011-2031, the equivalent of 660 new homes per year. In addition, West Oxfordshire is delivering an additional 2,750 new homes between 2021-2031 to assist Oxford City in meeting its unmet housing need. As a result, the total level of housing provision until 2031 is forecast to be at least 15,950 homes.

3.4.3 A significant proportion of this housing will be provided in the towns of Witney, Carterton and Chipping Norton, and around 10,000 of the new homes will be delivered along the A40 corridor in Carterton, Witney, and Eynsham Parish. Based on existing travel choices the substantial future growth would worsen the current congestion on the A40 corridor due to its limited capacity. However, the A40 corridor improvement schemes, including the A40 Dualling scheme, aim to alleviate congestion by encouraging a modal shift from the private car to the more sustainable use of public transport, walking and cycling, will increase the A40 corridor capacity and facilitate delivery of these new homes. Four key Strategic Development Areas have been identified along the A40 corridor (mentioned in the section 2.2.5 and shown in Figure 2-1).

3.4.4 Two of the key sites surrounding the A40 are the Salt Cross Garden Village (SCGV) development area and the West Eynsham Strategic Development Area (SDA). OCGV and West Eynsham SDA combined will provide around 3,200 new homes, a Science Park generating a significant number of new jobs, primary and secondary education provision and additional service facilities. Although the two developments are separated by the physical barrier of the A40, there are several interdependencies between OCGV and West Eynsham SDA including transport and access arrangements.

3.4.5 According to the Oxford Local Plan 2036, 10,884 new homes will be delivered in Oxford between 2016-2036. In addition to this, and as a result of the constrained nature of Oxford (due to greenbelt and other sensitive areas), the remaining Oxfordshire districts need to collectively deliver 14,300 dwellings by 2031 to assist Oxford in meeting its unmet housing need.

3.4.6 In the county as a whole, 88,000 new jobs and 100,000 new homes will be delivered between 2011-2031 (number of homes by site is listed in Appendix A), as set out in Oxfordshire's Strategic Housing Market Assessment[17]. Up to 4,556 of these new jobs will be delivered at Oxfordshire Cotswold Garden Village, just north of the A40 near Eynsham.

Transport Modelling

3.4.7 As part of the successful HIF bid modelling was undertaken using the Oxfordshire Strategic Model (OSM) in order to assess the impact of the A40 Dualling scheme on the transport network. Three scenarios were tested:

- Scenario P, Do Nothing, Future Year Growth; without 'dependent' development; without transport interventions
- Scenario S, Future Year Growth; without 'dependent' development; with transport interventions
- Scenario R, Future Year Growth; with dependent development; with transport interventions

[17] The Oxfordshire Strategic Housing Market Assessment (https://www.oxford.gov.uk/downloads/download/495/strategic_housing_market_assessment, 2014)

3.4.8 The results from Scenario P show that the growth in housing and employment within the vicinity of the A40 Corridor is likely to negatively impact upon the transport network. OSM modelling of Scenario P shows that with 5,223 independent new homes increased delay and congestion are likely. Queues and delays are likely to be experienced at the A40 junctions with Cassington Road, Witney Road and Cuckoo Lane. These junctions are forecast to be approaching capacity or over capacity.

3.4.9 OSM forecasting of Scenario S shows that the introduction of the proposed A40 Dualling is likely to attract induced highway demand, by providing additional capacity, whilst reducing delay and increasing average speeds.

3.4.10 High level observations from OSM based on 2041 Scenario R suggest that tidal movement patterns are likely to persist along the A40 with the main movement eastbound towards Oxford in the AM peak and westbound from Oxford in the PM peak. Demand levels along the A40 corridor are consistent as alternative parallel routes are less attractive.

3.4.11 Overall, the observations for the AM peak are as follows:

- Due to the growth and the associated increase in capacity more traffic is drawn to the A40 corridor
- Additional capacity is provided for bus services at Duke's Cut and westbound along the A40 corridor
- There is a forecast increase in general network delay eastbound on the dual motorway section east of Witney at the proposed roundabout junction enabling HIF development site access. This increase in delay is likely to be associated with additional demand accessing the network at the new junction. As the design evolves this junction may need to be amended to facilitate additional capacity
- Widening at Duke's Cut is likely to lead to reduced bus journey times through this section

3.4.12 Overall, the observations for the PM peak are as follows:

- As with the AM peak, additional traffic is drawn to the A40 corridor
- There is a forecast increase in general network delay eastbound and westbound on the dual motorway section east of Witney. This increase in delay is likely to be associated with additional demand accessing the network from proposed HIF development sites. As the design evolves a multi lane signal-controlled roundabout may be required to provide additional capacity
- Public transport modelling suggests that the introduction of the westbound bus lane in Scenario S is likely to reduce bus journey times between Wolvercote and Witney, when compared to Scenario P, particularly in the PM peak, bus journey times are forecast to reduce by almost 5 minutes. Modelled comparison of bus journey times between Scenario R and Scenario P suggest a forecast reduction in bus journey time of around 4 minutes in the PM peak. This equates to a bus journey time increase of around 1 minute for Scenario R with proposed HIF growth included.

3.4.13 Given the scale of growth and existing issues, it is unlikely that congestion and delay can be completely removed from the A40 entirely. HIF infrastructure is likely to improve A40 performance in Scenario S, however some corridor delays are likely to be experienced and junction design review may be required, particularly to the development access roundabout. The proposal does bring substantial advantages to public transport journey speed and reliability along the corridor, enhancing this both for existing journeys and those from the new developments.

3.4.14 Furthermore, the A40 Dualling is considered to be intrinsically linked with housing developments at North Witney and East Witney, enabling improved access to Eynsham Park & Ride, Oxford and beyond. The linkage of the infrastructure is evidenced by analysis of modelled car journey times along the dualled section. In the eastbound direction, in all modelled time periods, Scenario S journey times, with the dualling are lower than those in Scenario P, without the dualling. Whilst Scenario R journey times, with HIF dependant development, are forecast to increase compared to Scenario S, journey times remain lower than in Scenario P. The increase in eastbound journey time between Scenario S and Scenario R is forecast to be less than 1 minute in the morning peak, in other time periods, the increase in journey time is predicted to be much less than 1 minute. As such, the addition of 1,850 HIF dwellings at Witney, in parallel with additional A40 Dualling is forecast to be accommodated by the added capacity, at least maintaining Do-minimum journey times through the dualled section. The A40 Dualling scheme is also intended to enable access to public transport facilities at Eynsham Park & Ride.

3.4.15 Whilst the HIF bid does not consider assessment of the A40 Dualling operating within or above capacity, volume/capacity (V/C) has been undertaken for several junctions north of Eynsham as part of Scenario P. This modelling forecasts that in 2041 the two A40 junctions with Cassington Lane and Witney Road are likely to be over capacity (V/C >95%), thus breaching a reasonable level of service. The A40 junction with Cuckoo Lane is forecast to have a V/C >85%, thus approaching operational capacity. This indicates that by 2041 without further intervention the A40 will be significantly over capacity, leading to considerable congestion and delays.

3.5 Identifying the need for Intervention

3.5.1 The analysis to date has demonstrated that there are significant challenges on the A40 corridor between Witney and Oxford, both existing issues and future concerns.

3.5.2 These include vehicle congestion, which affects both private and public transport modes, air and noise pollution, a lack of peak-time public transport provision and potential safety concerns. In addition, if housing development comes forward as planned, there will be significant capacity issues on the existing infrastructure. There is a clear need for infrastructure improvements to enable delivery of additional homes in the area.

3.5.3 The A40 is an important long-distance route linking central and east England with south west England and south and west Wales. It is also the major arterial route in West Oxfordshire linking the growing towns of Witney and Carterton with Oxford and the wider country. Thus, based on the above review of current and future context and conditions, intervention is needed to:

- **Encourage modal shift to sustainable travel**: Significant private car traffic congestion reduces bus reliability and attractiveness. This includes improving integration between various modes as a means of reducing car travel and encouraging the use of more sustainable modes of transport.
- **Provide high quality cycling and walking provision**: to encourage more sustainable and active travel.
- **Protect and enhance the environment**: There is an AQMA along the eastern section of the A40 corridor, between Wolvercote and Cutteslowe, that was declared in 2010 due to exceedances of nitrogen dioxide. The A40 corridor is surrounded by several ecological/landscape designations, such as noise important areas and Special Areas of Conservation (SACs).
- **Reduce congestion**: There are long-standing issues of congestion and journey time unreliability on the A40 corridor, issues which are likely to be exacerbated by planned local growth.
- **Support local growth**: West Oxfordshire will deliver an increase of 15,950 homes by 2031, most of which will be centred around Witney, Carterton, and Eynsham. Local growth plans also include the delivery of 4,556 new jobs in Salt Cross Garden Village, a new garden village to the north of A40, near Eynsham. Furthermore, economic growth, including increased employment, is planned more widely across West Oxfordshire. There is a Science Park proposed at Salt Cross. Reliable infrastructure is essential to support local growth, as well as providing enhanced connectivity from West Oxfordshire to employment areas in central, northern and eastern Oxford.

3.5.4 As such, the analysis of challenges to date has demonstrated the need for interventions to address the issues and ensure the area has transport provisions suitable for the intended increase in housing.

3.5.5 The next chapter sets out scheme objectives that have been developed on the basis of the identified challenges and existing policies, both local and national.

3.5.6 A longlist of options was then generated to address the identified challenges by meeting the proposed objectives. For this assessment, a modally agnostic approach is taken, irrespective of previously identified or 'preferred' options.

4 Development of Scheme Objectives

4.1 Scheme Objectives

4.1.1 This chapter of the report sets out the agreed scheme objectives based on the assessment of contextual factors, challenges and the underlying policy context set out in the previous two chapters of this report.

4.1.2 As such, the objectives have been tailored to the need for the A40 Dualling scheme, but also to maintain consistency with the wider policy aspirations, other A40 corridor schemes and ensure that the scheme will contribute to delivering wider regional policies and plans.

4.1.3 The scheme objectives were agreed in workshops with OCC, and after reviewing them against the objectives in the LTP4 and West Oxfordshire District Council's (WODC) Local Plan. The objectives for each of these are set out in turn, with alignment between the two shown in Table 4-2.

4.1.4 The A40 Corridor Strategy Objectives are also considered, as the A40 Dualling scheme was originally developed as part of this strategy.

4.1.5 All potential scheme options will be assessed against these objectives.

4.2 LTP4 and WODC Local Plan Objectives

4.2.1 The OCC 'Connecting Oxfordshire' Local Transport Plan 4 (LTP4) developed three overarching transport goals around the economy (1), the environment (2) and society (3), and ten objectives to support these goals. These are set out in Table 4-1.

Table 4-1 LTP4 Goals and Objectives

LTP4 Goals		LTP4 Objectives
LTP4#1 – Support jobs and housing growth and economic vitality	1.1	Maintain and improve transport connections to support economic growth and vitality across the county
	1.2	Make most effective use of all available transport capacity through innovative management of the network
	1.3	Increase journey time reliability and minimise end-to-end public transport journey times on main routes
	1.4	Develop a high-quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment
LTP4#2 – Reduce emissions, enhance air quality and support the transition to a low carbon economy	2.1	Minimise the need to travel
	2.2	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive
	2.3	Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment
	2.4	Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets
LTP4#3 – Support social inclusion and equal opportunities; protect and enhance the environment and improve quality of life (including public health, safety and individual wellbeing)	3.1	Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment
	3.2	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services

Source: Connecting Oxfordshire: Local Transport Plan 2015-2031, Oxfordshire County Council

4.2.2 The specific transport related objectives identified in the WODC Local Plan are listed in Table 4-2 below. In addition, these have been mapped to the most pertinent OCC LTP4 objectives to demonstrate the synergy and consistency between them. The WODC objectives include a combination of economic, environmental, and social elements, and hence any one objective may map to more than one of the LTP4's three overarching goals.

Table 4-2. WODC Local Plan 2031: Transport-related Core Objectives

Core Objectives (CO)	Description	Map to LTP4 Objectives
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	1.1, 2.1
CO10	Ensure that land is not released for new development until the supporting infrastructure and facilities are secured	1.2, 2.3
CO11	Maximise the opportunity for walking, cycling and use of public transport	1.3, 2.2

Core Objectives (CO)	Description	Map to LTP4 Objectives
CO13	Plan for enhanced access to services and facilities without unacceptably impacting upon the character and resources of West Oxfordshire	3.1, 3.2
CO15	Contribute to reducing the causes and adverse impacts of climate change, especially flood risk	2.4, 3.1
CO16	Enable improvements in water and air quality	3.1
CO17	Minimise the use of non-renewable natural resources and promote more widespread use of renewable energy solutions	2.4

4.2.3 The objectives above, from both the OCC's LTP4 and WODC's Local Plan, have been used to inform the A40 Dualling scheme objectives, as found in Section 4.6. The LTP4 acknowledges that predicting and providing for increased demand for road travel by car and freight vehicles solely in the form of highway capacity improvements is neither affordable nor desirable from an environmental or economic perspective. Therefore, it is considered vital that journeys made by sole occupancy vehicles are reduced. Further to this, it is also highlighted in LTP4, and in the WODC Core Objectives, that journey time delays on the road network can impact on the local economy and make the area less desirable for living and working. There is also an important emphasis on ensuring that any impacts upon the environment are kept to a minimum, or better yet reduced. Both the LTP4 and WODC's Local Plan put a clear emphasis on Climate Change and reducing emissions across Oxfordshire in line with Government targets. Overall the objectives from the above documents place a focus on enabling housing and economic growth, encouraging use of sustainable transport and improving the natural environment, all of which are covered as part of the A40 Dualling objectives.

4.3 A40 Corridor Strategy Objectives

4.3.1 The **A40 Corridor Strategy**, which forms the basis of the development of the A40 Dualling scheme, was developed alongside the WODC Local Plan. The overarching A40 Strategy has three core objectives:

- a) Improve travel times and journey reliability along the A40 corridor, particularly between Witney and Oxford;
- b) Stimulate economic growth, in line with the Oxfordshire Strategic Economic Plan; and
- c) Improve safety and reduce environmental impacts such as air pollution and noise along the A40 corridor. These objectives were developed to address the specific problems identified while taking into account the relevant County and District goals and objectives.

4.3.2 The A40 Corridor Strategy was initially comprised of two overarching schemes, the A40 Science Transit 2 and the A40 Smart Corridor. In formulating the objectives for these two overarching schemes, the key challenges and priorities were distilled, and objectives created accordingly.

4.4 A40 Science Transit Objectives

4.4.1 As part of the A40 Science Transit scheme, five objectives were defined. Table 4-3 below outlines the linkages between the objectives for the A40 Science Transit scheme, the LTP4 goals and objectives and outlines any relevance to the A40. The red, yellow and orange represent a high, medium and low relevance to the A40 respectively. This clearly shows that the A40 Science Transit as a scheme is aligned with the goals and objectives of LTP4 and will help achieve the aims of the LTP4.

Table 4-3. Connecting Oxfordshire links to Science Transit Phase 2 Objectives

LTP4 Goals	LTP4 Objectives	Relevance to A40 situation	ST2 Objectives
To support jobs and housing growth and economic vitality	Maintain and improve transport connections to support economic growth and vitality across the county	High – West Oxfordshire has the lowest productivity and competitiveness in the county but has been identified for significant growth	To improve travel times and/or journey reliability between Witney/Carterton and Oxford To stimulate economic growth within Oxford, West Oxfordshire and the Oxfordshire Knowledge Spine
	Make most effective use of all available transport capacity through innovative management of the network	High – A40 is at or close to capacity for much of the day leading to problems	
	Increase journey time reliability and minimise end-to-end public transport journey times on main routes	High – journey times along A40 have high variability and buses have no way to avoid them	
	Develop a high quality, innovative and resilient integrated transport system that is attractive to customers and generates inward investment	Low – Will be significant whichever option is chosen	

LTP4 Goals	LTP4 Objectives	Relevance to A40 situation	ST2 Objectives
To support the transition to a low carbon future	Minimise the need to travel	Low – none of the options would have a direct impact on this, although they may have an indirect impact through influencing location of development or encouraging longer distance commuting	Interface with existing and committed schemes in the corridor including P&R To reduce carbon emissions and other pollutants associated with travel To encourage safer travel between Witney/Carterton and Oxford
	Reduce the proportion of journeys made by private car by making the use of public transport, walking and cycling more attractive.	High – The high levels of bus use between West Oxfordshire and Oxford city centre has been a notable success of the county's transport strategy of the last 20- 30 years	
	Influence the location and layout of development to maximise the use and value of existing and planned sustainable transport investment	Low – Will be significant whichever option is chosen	
	Reduce per capita carbon emissions from transport in Oxfordshire in line with UK Government targets.	High – stationary or slow-moving traffic will be emitting excess carbon for extended periods daily	
To support social inclusion and equality of opportunity To protect and, wherever possible enhance Oxfordshire's environment and improve quality of health To improve public health, safety and individual well being	Mitigate and wherever possible enhance the impacts of transport on the local built, historic and natural environment	Medium – this would need to be taken into account whichever option is chosen	
	Improve public health and wellbeing by increasing levels of walking and cycling, reducing transport emissions, reducing casualties and enabling inclusive access to jobs, education, training and services	High – stationary or slow-moving traffic will be emitting excess carbon for extended periods daily; traffic conditions may put off prospective walkers or cyclists on route.	

Source: A40 Science Transit 2 – Option Assessment Report, Oxfordshire County Council (2017)

4.5 A40 Smart Corridor Objectives

4.5.1 Three main challenges informed the development of six objectives for the A40 Smart Corridor. These challenges, along with the A40 Smart Corridor objectives and links between these objectives and the WODC and LTP4 objectives set out below in Table 4-4.

Table 4-4. A40 Smart Corridor Objectives

Challenge Summary	A40 Smart Corridor Objectives	Measures of Success	Map to WODC Transport and LTP 4 Objectives
There are long-standing issues of congestion and journey time unreliability on the A40 corridor, issues which are likely to be exacerbated by planned local growth.	Ensure the impact of additional housing on the transport network is acceptable and associated impacts on it are adequately mitigated	Traffic queueing and congestion levels	CO1, CO13 LTP4#1, LTP4#2
West Oxfordshire will deliver an increase of 15,950 homes by 2031, most of which will be centred around Witney, Carterton, and Eynsham. Local growth plans also include the delivery of 4,556 new jobs in Oxfordshire Cotswolds Garden Village, a new garden village to the north of A40, near Eynsham.	Unlock the delivery of 4,813 additional homes along the A40 Smart Corridor in support of the Housing and Growth Deal	Delivery of homes	CO1 LTP4#1, LTP4#2
	Support the delivery of 2,222 affordable homes along the A40 Smart Corridor	Delivery of affordable housing	
	Unlock economic growth at key employment sites along the 'Knowledge Spine' at Oxfordshire Cotswolds Garden Village	Delivery of jobs	
Significant traffic congestion reduces bus reliability and attractiveness and contributes to air and noise pollution.	Encourage sustainable bus travel between Eynsham/Witney/wider area and Oxford	Mode shift to bus	CO1, CO11, CO16 LTP4#2, LTP4#3
	Encourage sustainable cycle and pedestrian travel between Eynsham/Witney/wider area and Oxford	Mode shift to walk and cycle Improved air quality and wellbeing	

4.6 A40 Dualling Objectives

4.6.1 The objectives for the proposed scheme are a combination of both the A40 Smart Corridor and A40ST2 objectives and therefore also draw on the LTP4 and WODC Local Plan objectives, as explained above. The **objectives for the A40 Dualling scheme** are as follows:

Table 4-5. A40 Dualling Scheme Objectives

Ref	Theme	Objective	Relevance against the scheme
Objective 1	Support housing development	Unlock the delivery of 4,813 additional homes along the A40 Smart Corridor in support of the Housing and Growth Deal	Improving access to public transport by enhancing the connectivity and integration of different modes including private vehicle and bus
Objective 2		Support the delivery of 2,222 affordable homes along the A40 Smart Corridor	
Objective 3		Ensure the impact of additional housing on the transport network is acceptable and associated impacts on it are adequately mitigated	Additional capacity provided further enhances the benefits of the rest of the A40 Corridor schemes
Objective 4	Support economic growth	Unlock economic growth at key employment sites along the 'Knowledge Spine' at Oxfordshire Cotswolds Garden Village	Additional capacity (both private and public transport) to employment sites and improved accessibility, in particular to the east of Eynsham, such as to Oxford.
Objective 5		To stimulate economic growth within Oxford, West Oxfordshire and the Oxfordshire Knowledge Spine	
Objective 6	Improve sustainable transport and provision	Encourage sustainable bus travel between Eynsham/Witney/wider area and Oxford	Improved access to / from West Oxfordshire to Oxford.
Objective 7		Encourage sustainable cycle and pedestrian travel between Eynsham/Witney/wider area and Oxford	Enhance the current shared footway/ cycleway/ crossings.
Objective 8		To improve travel times and/or journey reliability between Witney/Carterton and Oxford	Additional capacity and resilience.
Objective 9	Environment	To reduce carbon emissions and other pollutants associated with travel	Shift from car to bus would reduce emissions and improve air quality; may also improve journey time.
Objective 10	Improve road safety	To encourage safer travel between Witney/Carterton and Oxford	Redesigned crossing and network would help reduce incidents (including for active travel).
Objective 11	Strategic alignment	Interface with existing and committed schemes in the corridor including P&R	Additional capacity further enhances the benefits of the rest of the rest of the A40 Corridor schemes

5 Option Development and Sifting

5.1 Introduction

5.1.1 This chapter discusses the option development method and assessment framework developed to sift the options. The assessment framework has been developed in accordance to the DfT's the Transport Appraisal Process (2014), EAST Guidance (2017) and the HMT Greenbook (2018).

5.1.2 The options have been derived based on the assessment of current and forecast travel patterns, development and growth, and challenges; previous and current proposals from the relevant local authorities and stakeholders; workshops with Oxfordshire County Council officers; and professional judgement based on experience elsewhere and within Oxfordshire to provide a comprehensive list of options.

5.1.3 It is recognised that options could be packaged in order to provide an optimum solution to the identified problems and achieve the scheme objectives. However, funding, financing and affordability as well as deliverability will need to be taken into account for not just single options but also potential packages. Delivery may be dependent on different agencies, developers and funding sources, and completion and sign-off of other emerging strategies.

5.1.4 Options that are sifted out may still perform well either as part of an overall package; to address other specific issues such as new developments; or following implementation of other options.

5.2 Background

5.2.1 The purpose of this section is to document the strategic option appraisal work that underpins the proposed A40 corridor strategy and the schemes, as well as the more recent optioneering exercise that has been conducted to inform the design of the A40 Dualling scheme. Figure 5-1 gives an overview of the previous strategies and consultations which have taken place in chronological order. The text below considers each of these in turn.

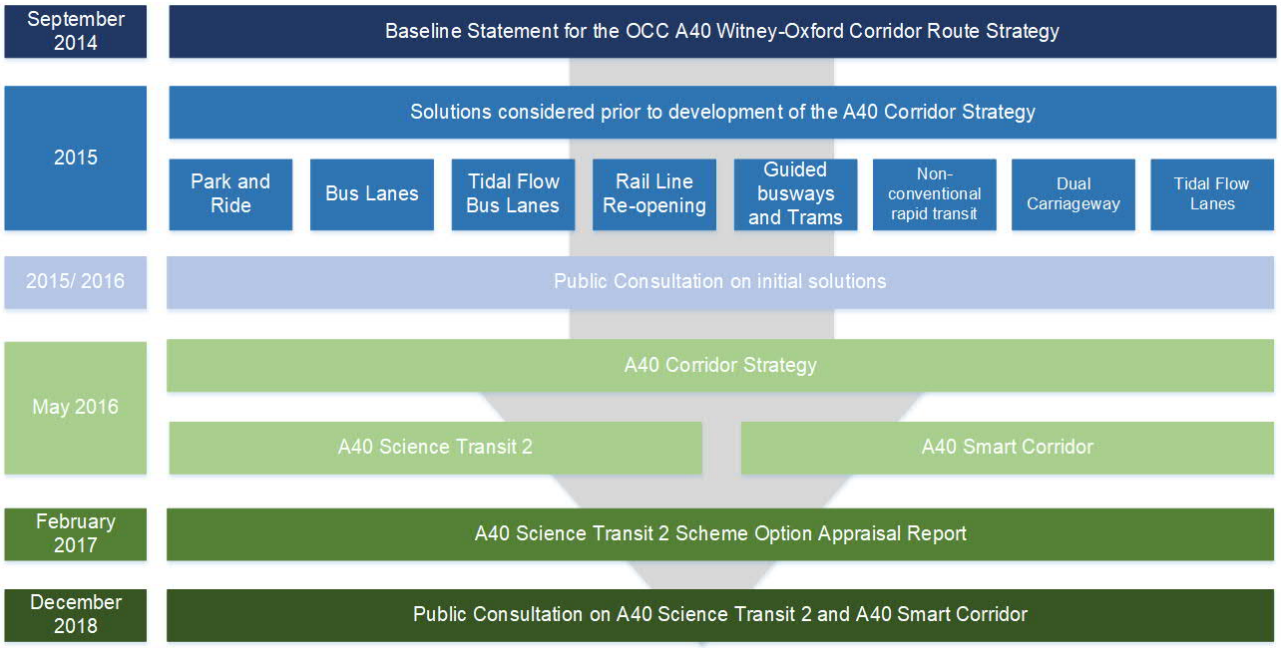


Figure 5-1 Overview of Previous Consultations

5.2.2 A Baseline Statement for the OCC A40 Witney-Oxford Corridor Route Strategy was prepared in September 2014. This identified that the A40 has long standing issues of congestion and leading to extended journey times and high journey unreliability. Key problems and challenges for the corridor were identified and these are outlined in Section 1.1.9 of this report. It has also been noted that there are few alternative means of travel from this part of West Oxfordshire as the alternative routes also suffer from heavy congestion, there are no rail or fixed link connections, buses have no alternative but to use the congested roads.

5.2.3 Furthermore, as part of informing the development of an A40 Corridor Strategy a range of potential improvement solutions were considered including Park and Ride, Bus Lanes, Tidal Flow Bus Lanes and Dual Carriageway. A full list of potential options is shown in Figure 5-1.

5.2.4 Five of these options then went through a public consultation process in 2015, in order to gather public opinions on the potential proposed schemes. The results represent 796 responses in total and can be seen in Figure 5-2 and Figure 5-3. When asked about level of support for each concept presented, the option that received the highest 'strongly support' response, with just under 50%, was the 'dual carriageway' option and the option with the highest 'do not support at all' response, with just over 40%, was the 'guided busway'. When the public were asked '*which one scheme or combinations of options, do you think Oxfordshire County Council give top priority to?',* the top three in favour were 'dual carriageway' with 28%, followed by 'bus lane' with 15%, and 'train' with 13%.

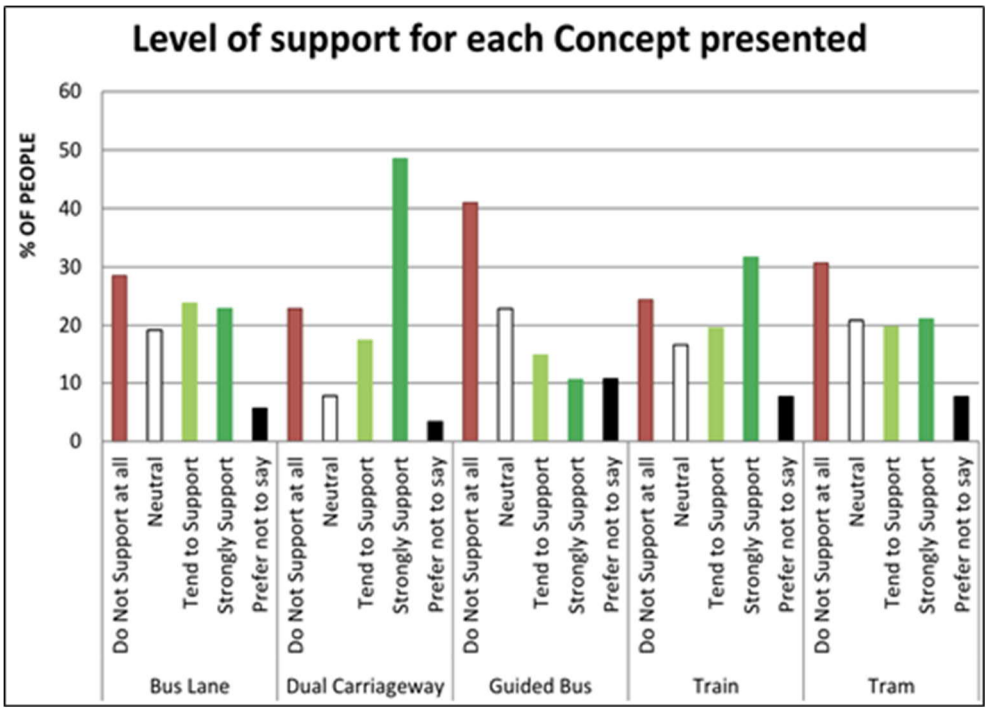


Figure 5-2 Public consultation results (level of support)

Source: Investing in the A40 – Long Term Strategy Consultation Report, OCC (May 2016)

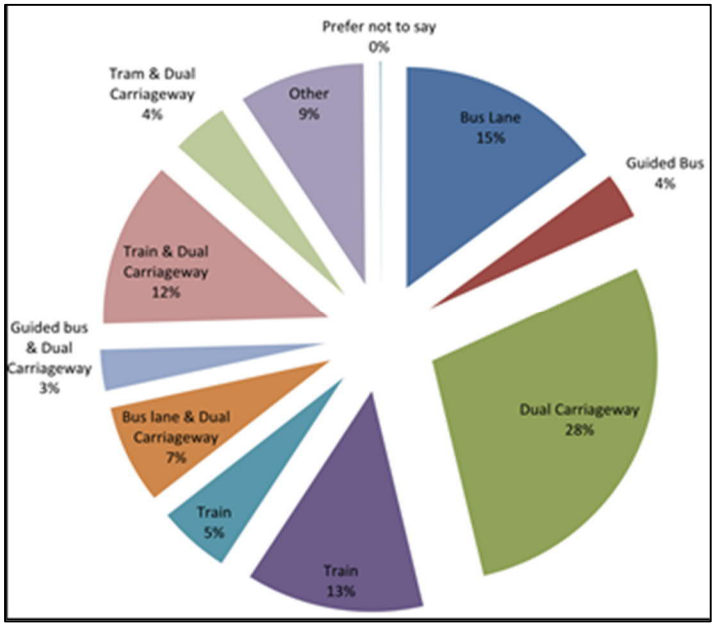


Figure 5-3 Public consultation results (scheme priority)

Source: Investing in the A40 – Long Term Strategy Consultation Report, OCC (May 2016)

5.2.5 Following this consultation, in May 2016 OCC adopted the A40 Corridor Strategy which is a road-based improvement strategy as the most viable and affordable option which could be delivered on a relatively short timescale. The strategy seeks to encourage greater use of public transport and cycling for trips between West Oxfordshire and Oxford. As mentioned previously, the A40 Corridor Strategy promoted two schemes: the A40 Science Transit 2 scheme and the A40 Smart Corridor scheme.

5.2.6 As part of the option appraisal work on the A40 Strategy, A40 Science Transit 2 scheme Option Appraisal Report (2017)[18] was produced. In this report, a number of transport options were assessed based on the DfT's Early Assessment Sifting Tool (EAST)[19] and the results of this appraisal can be found in Table 5-1. The five cases were weighted as: 45% Strategic, 35% Economic, 10% Financial, 5% Managerial, and 5% Commercial. The **A40 Dualling scheme** scored third highest in relation to achieving criteria.

[18] A40 Science Transit Phase 2 – Option Assessment Report (OCC, 2017)
[19] EAST is a decision support tool aimed at providing decision makers with relevant, high level, information to help them form an early view of how options perform and compare. The EAST assessment does not in itself make comparisons or recommendations between options, but it is possible to take the output from the EAST assessments and use this to assess the relative "value" of the different options. The tool is not prescriptive, and it is for decision-makers to determine whether and how to use it.

Table 5-1. A40 Science Transit 2 EAST Assessment – LGF Scoring[20]

Option	Description	Strategic (20%)	Economic (30%)	Managerial (20%)	Financial (20%)	Commercial (5%)	TOTAL
Dual Carriageway	Widening the A40 to 2 lanes in each direction separated by a central reservation between Shores Green and A40/A44 Link Road generally within current corridor but with significant alterations to junctions. Two options suggested at Eynsham – either widening on current line or bypassing to the north.	15	20	15	11	3	69
Bus Lane	Building 3 metre wide bus lanes on the existing verges between Shores Green and Dukes Cut bridge in both directions. The bus lanes would be separated from the general traffic by a 1 metre buffer.	16	26	14	14	5	82
Guided Bus	Installing a two-way guided busway track to provide a new route from Witney to Oxford using specially adapted buses. The route would use the line of the old railway from Witney to Cassington, except through Eynsham, but would continue alongside the A40 to Duke's Cut canal bridge.	14	26	11	8	2	71
Heavy Rail	Building a new single track railway line with double track running through stations to allow for trains to pass each other. The line would run from a new station south of Duckington Roundabout to join the old line near South Leigh, then pass between Eynsham and B4449 before joining the Cotswold line at Yarnton.	15	22	11	6	1	66
Light Rail	Double track light rail line from south of Ducklington to the old railway at South Leigh then using the old railway line to Eynsham where a new line would be created between the village and the southern bypass. The line would continue on the old railway line to A40 where it would either continue to the Cotswold Line at Yarnton or continue alongside the A40 toward Oxford.	15	25	11	7	1	70

Source: A40 Science Transit 2 – Option Assessment Report, Oxfordshire County Council (2017)

[20] The weighting (45% Strategic, 35% Economic, 10% Financial, 5% Managerial, 5% Commercial) is based on the Oxfordshire Local Enterprise Partnership (LEP) Local Growth Fund (LGF) assessment (the cases are weighted according to local priorities).

5.2.7 A further public consultation then took place in December 2018 focused on public views of the proposed A40 schemes ('Phase one – A40 Science Transit 2' and 'Phase two – A40 Smart Corridor'). For this consultation the information provided on the proposed A40 schemes was much more detailed than the previous consultation. The consultation received 455 responses with the public given three options to choose from: 'like', 'do not like' and 'no view'. The two schemes which came out on top, both gaining over 70% of 'like' votes were 'B4044 Community Path from Eynsham to Botley' and the 'A40 Cycle link to the National Cycle Route 5 on the Oxford Canal Tow Path'. The two with the most 'do not like' votes, placing them to be the least popular were 'A40 Eynsham Park and Ride' and 'Bus Lane'.

Table 5-2 Public consultation results for proposed Phase 1 and Phase 2

What best describes your opinion of the proposals?	Like	Do not like	No view
A40 Eynsham Park & Ride proposal	35%	46%	19%
Bus Lane proposal	41%	40%	19%
A40 Dual Carriageway	53%	26%	21%
Completing the A40 Westbound Bus Lane	44%	32%	24%
A40 Eastbound bus lane over the Duke's Cut and Wolvercote railway bridges	44%	29%	27%
B4044 Community Path from Eynsham to Botley	76%	5%	18%
A40 Cycle link to the National Cycle Route 5 on the Oxford Canal Tow Path	71%	5%	24%

Source: Investing in the A40 – Long Term Strategy Consultation Report, OCC (May 2016)

5.2.8 Both the options appraisal and the public consultations demonstrate support for the A40 Dualling scheme. The initial consultation showed that the 'dual carriageway' option was the most highly supported option with just under 50% support. In the second round of public consultation the 'A40 Dual Carriageway' option was liked by 53% of respondents and received the third fewest do not like votes. This shows a clear public support for the A40 Dualling scheme. Furthermore, it should be noted these consultations did not suggest that multiple interventions could be taken forward (for example both dual carriageway and bus lane coming forward) and instead considered the interventions in opposition. Further consultation showing the interventions moving forward as a package may lead to more public support.

5.2.9 Based on the option appraisal work and the public consultation exercise outlined above a long-term strategy for the A40 was recommended taking a combined approach which included both increased road capacity as well as improvements to the public transport offer. Funding has been secured from the Government to deliver a number of projects which will help realise the A40 Strategy and form the A40 Corridor Improvement Programme. These include, but are not limited to, a section of new road dualling between Witney and Eynsham, the provision of a new Park and Ride site at Eynsham, a fully-segregated bus lanes between Eynsham and Oxford Ring Road and improved cycle route provision from Witney along the A40 to Oxford.

5.2.10 Originally, the A40 Smart Corridor scheme was envisioned to be delivered as a second phase of works after the completion of A40ST2. However, following the award of the HIF funding OCC is now proposing to combine elements of the A40 Smart Corridor and A40ST2 schemes, to ensure scheme benefits are maximised, deliver cost and programme efficiencies and minimise disruption during construction. As such, the new set of schemes is called the "A40 Corridor Improvements" are being taken forward.

5.3 A40 Corridor Improvements

5.3.1 The A40 Corridor Improvements consist of the following schemes, as shown in Figure 5-4:

- The Integrated Bus Lanes scheme;
- A40 Dualling between Hill Farm, Witney and Eynsham; and
- Capacity and connectivity improvements at Duke's Cut Bridges.

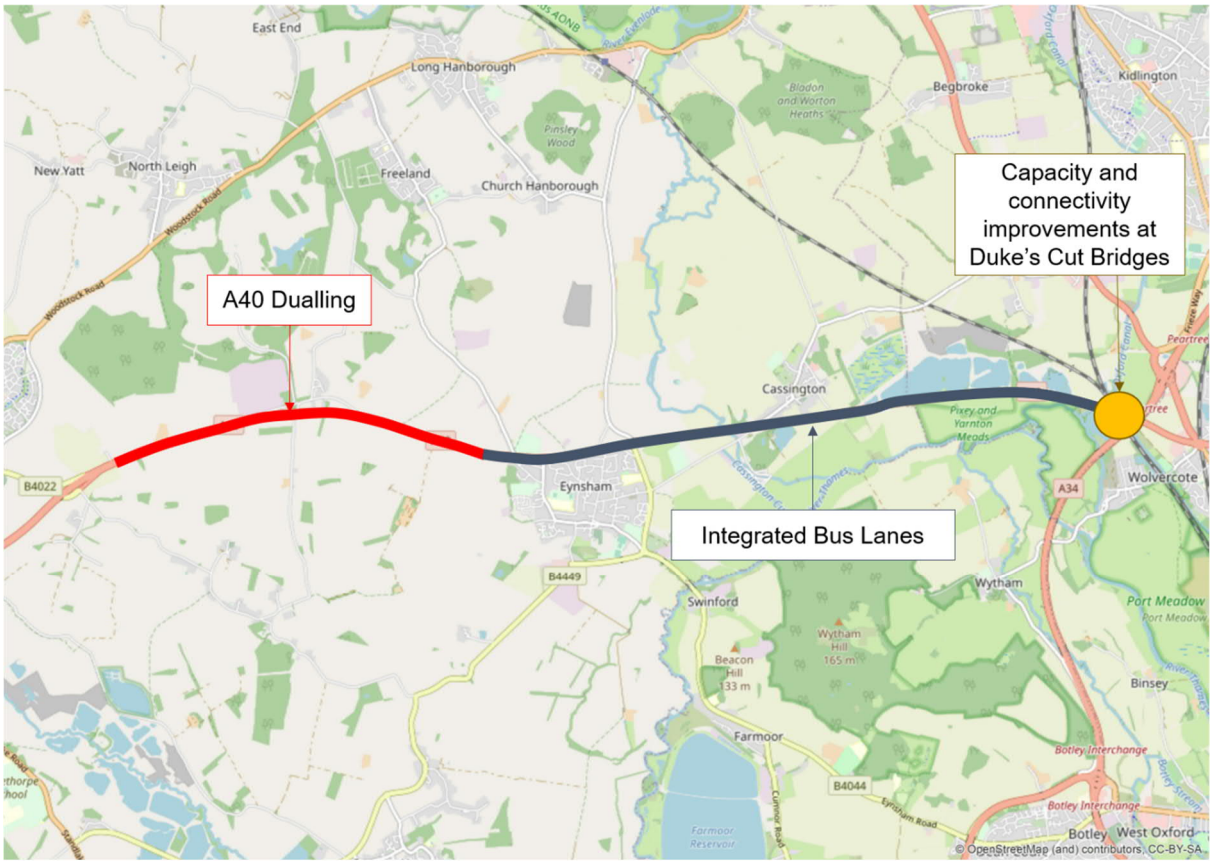


Figure 5-4 A40 Corridor Improvements

5.3.2 The A40 Dualling scheme requires changes to the existing road design, proposed crossings and will impact upon adjacent land. To meet these needs, a number of options have been devised to deliver the A40 Dualling scheme. The following section appraises these options.

5.4 Methodology

5.4.1 A robust option selection process following DfT guidance was undertaken to ensure that the shortlisted options represented the best way to meet the project objectives. The A40 Dualling scheme specific assessment framework is formed of two sifting stages as set out in the section 1.2. Each stage involved workshops with Oxfordshire County Council officers to agree the scoring and shortlisted options.

5.4.2 The options have been derived based on the following:

- Assessment of current and forecast travel patterns, development and growth, and identified challenges;
- Previous and current proposals from the relevant local authorities and stakeholders, especially the A40 Smart Corridor and A40 Science Transit 2 schemes as proposed in Oxfordshire County Council's A40 Strategy;
- Workshops with Oxfordshire County Council officers; and
- Professional judgement based on experience elsewhere and within Oxfordshire and across the UK.

5.4.3 The three overall scenarios which can be assessed are the Do Something, Do Minimum and Do Nothing options. For the avoidance of doubt, each of these scenarios have been described in Table 5-3 below, including reasoning (if applicable) for discounting this option. It should be noted that appraisal/scoring of a Do Something option was undertaken against the Do Minimum for that alignment, junction or access.

Table 5-3 Do Nothing, Do Minimum and Do Something scenarios

Scenario	Definition	Reason for discounting (if applicable)
Do Nothing (DN)	In this scenario there is no change to the existing A40, and no transport interventions come forward.	The DN scenario was discounted as a viable option prior to the original sift due to the inability of the option to meet the scheme objectives and accommodate for the planned growth across the A40 Corridor. Therefore, the DN scenario has not been considered as part of option assessment.

Do Minimum (DM)	For the purposes of this appraisal, the Do Minimum is in line with the Do Minimum specified in the A40 Smart Corridor HIF Business Case. This is defined as being "modelled on the existing highway network, with development at some locations that are not dependent on the delivery of the A40 Smart Corridor scheme." As such, the Do Minimum scenario assumes no physical interventions are undertaken on the network within the A40 Corridor that are not already committed or funded. The Do Minimum scenario does therefore include all committed local plan developments and transport schemes (including park and scheme/associated infrastructure).	For all alignments and junctions, the DM has been discounted as it would not provide the necessary infrastructure to support growth along the A40 Corridor and support the proposed Park and Ride. Similarly, for the majority of accesses the DM has been discounted due to capacity constraints, safety concerns and/or departures from standards. In some accesses the existing access has been retained as an option itself or as part of a new option, as it was decided there is merit in assessing these against other options to identify the best performing option for the access.
Do Something (DS)	This scenario is where an additional intervention is added to the network, in addition to the interventions provided in the DM scenario. For this scheme, the DS constitutes the options discussed below.	N/A

5.4.4 At each sifting stage, the evidence available to base the assessment on is different. Each sifting stage draws not only on the new evidence included as part of that stage, but also on the evidence compiled in the previous stage. Table 5-4 below shows the evidence available at each stage.

5.4.5 It is to be noted that this is an iterative process, further corrections to the scoring (Stage 2) can take place in line with feedback from relevant stakeholders, OCC and new/revised evidence.

Table 5-4 Sifting Stages

Sifting Stage	Method	Evidence
Stage 1 – Initial Longlist and Sifting	• Long list of options was developed, which if delivered can accommodate the dualling. • Number of options were sifted out as they had clear issues (such as constructability/ land take/ cost/acceptability) and are likely unfeasible/unviable and therefore not taken forward. • A list of options taken forward to stage 2 was developed.	• CAD sketches (for some options) • Priority for active travel/ sustainable travel • Professional judgement • Extents of highway boundary; land take • General location of utilities; constructability • Junction capacity modelling (for some options)
Stage 2 – Appraisal and Scoring	• Appraisal/ scoring of options which were not sifted out in the stage 1 was undertaken against a range of criteria (associated to strategic, economic, financial, management and commercial cases)	• CAD drawings (for some options) • Priority for active travel/ sustainable travel • Professional judgement • Extents of highway boundary; land take • General location of utilities; constructability • Junction capacity modelling (for some options)

5.5 Stage 1 – Initial Sift

5.5.1 This stage of sifting entails removing schemes with initial significant issues. These initial issues can include affordability, deliverability, acceptability, feasibility and also the options alignment with the scheme objectives. If an issue is identified the option can then be deemed unfeasible and is therefore not taken forward to the second sift.

5.5.2 An Initial Long List of options was developed and assessed, as shown in **Appendix D**. The Initial Long List of options contains both options for the road alignment of the A40 and for the junctions along the section of the A40 affected by the dualling proposals. Several options have been provided for each of the alignment options and junctions, and these are shown in Table 5-6.

5.5.3 As part of the sifting, a scoring process has been undertaken for each of the long list options. Options have been scored -3 to +2, as shown in Table 5-5. The categories against which the options have been scored are:

- Scheme Objectives: *concentrates on the scheme objectives as it relates to; unlocking the delivering homes including affordable homes and its impact on transport network is acceptable, delivering high value for money to the public sector, unlocking economic growth at employment sites, encouraging sustainable bus, cycle and pedestrian travel, improving travel times and/or journey reliability, reducing carbon emissions associated with travel, stimulating economic growth, encoring safer travel and interface with existing and committed schemes;*

- Deliverability: *concentrates on the dependency of the option and interface risk in relation to other projects, timescale of delivery during design phase, contractual complexity and risks;*
- Feasibility: *considers practical feasibility of an option in terms of engineering and complexity:*
- Affordability: *concentrates on the likely financial affordability of an option; and*
- Acceptability: *considers stakeholder acceptability of an option including public acceptability, local authorities, delivery partners, statutory bodies, landowners and utility companies.*

Table 5-5 Initial Sift Scoring Categories

#	Description
2	2: Very Good - Impact
1	1: Good - Impact
0	0: Negligible/ Neutral / No or Limited Impact
-1	-1: Poor - Impact
-2	-2: Very Poor - Impact
-3	-3: Show Stopper

5.5.4 It should be noted for each of the road alignment options, these options are split into three further sub-options reflecting different segments of the road. The preferred option for the alignment will likely be a combination of different segments from different road alignments.

5.5.5 As part of the assessment methodology modelling has been undertaken for the Barnard Gate Junction to understand the performance of different options and assess the interactions at the junction. Two options have been modelled for this option – a signalised junction and a roundabout. The signalised junction has been modelled using LinSig junction capacity modelling and the roundabout has been modelled using VISSIM.

5.5.6 LinSig v3.2.40.0 has been used to model the signalised junction. The modelling approach used includes the following:

- In order to model the demand dependency for pedestrians and side roads, two scenarios have been modelled, a Worst-Case Scenario with full demand and 120s cycle time, and an Additional Scenario with 50% of activations of demand dependent stages, which has been coded with 240s cycle time (equivalent to one activation every two cycles – 50%)
- The traffic flows for 2031 have been extracted from demand flows from the A40 Corridor Model – Scenario E1 provided by Pell Frischmann, combined with Manual Classified Turning Count (MCTC) data collected in 2020 (growth by 15%) for the side streets that are not modelled as part of the strategic model.
- The junction has been reviewed in isolation with impacts of any upstream and downstream junctions not being considered. As such LinSig works on the basis that traffic can flow freely away from the junction. LinSig cannot model 'suppressed' demand on the network, only the levels of traffic that can pass through the junction

5.5.7 The updated and extended VISSIM Model for the A40 Corridor was used to model the roundabout option. The model uses the estimated demand based on outputs from the A40 Corridor Highway Model and the 2020 demand included in the validated VISSIM model developed by AECOM. The modelling approach is summarised below:

- Contrary to the signalised junction layout, the proposed design of the roundabout option does not include for a north-south crossing for Non-Motorised User (NMU) facilities at this junction. North-south movements are catered for via the existing Hill Farm accommodation bridge and existing public right of way.
- The junction has been reviewed in isolation and therefore impacts of the operation of any upstream and downstream junctions has not been considered.

5.5.8 Detailed appraisal and rationale of sifting out options are presented in **Appendix F**, whilst the options which have been taken forward to Stage 2 sift are outlined in more detail in the next chapter. Figure 5-5 shows the locations of the junctions and alignments referred to in Table 5-6.

Table 5-6. Sift 1

Ref	Options	Comment
1	Route Alignment 1	Three sub-sections of Road Alignments were developed and assessed for option 1, two were taken forward to Stage 2 sift: • Sifting Item No. 1.1: A40 Rural Dual Carriageway Alignment West Link - Option 1, begins at the tie-in to the existing dualled carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the Barnard Gate Junction. • Sifting Item No. 1.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 1, from the future location of a proposed development driven Eynsham West Roundabout, the dualling continues online, travelling eastwards with the westbound carriageway utilising the existing A40 until it ties in with the Eynsham Park & Ride Junction. The alignment impacts on an existing intermediate pressure gas main.
2	Route Alignment 2	Three sub-sections of Road Alignments were developed and assessed for option 2, two were taken forward to Stage 2 sift: • Sifting Item No. 2.1: A40 Rural Dual Carriageway Alignment West Link - Option 2, begins at the tie-in to the existing dualled carriageway in the vicinity of Hill Farm accesses, and continues online eastwards until it reaches the proposed Barnard Gate Junction. • Sifting Item No. 2.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 2, alignment follows the same alignment as Option 1. •
3	Route Alignment 3	Initially 3 sub-sections of Road Alignments were developed and assessed for option 3 but none of them were taken forward to Stage 2 sift, as all were considered unfeasible.
4	Route Alignment 4	Three sub-sections of Road Alignments were developed and assessed for option 4, three were taken forward to Stage 2 sift: • Sifting Item No. 4.1: A40 Rural Dual Carriageway Alignment West Link - Option 4, alignment follows the same alignment as Option 1. • Sifting Item No. 4.2: A40 Rural Dual Carriageway Alignment East Link - Option 4, begins at the proposed Barnard Gate Junction and continues online eastwards, and moves offline north of the existing A40 at the motocross area before it comes back online in the vicinity of the future location of a proposed development driven Eynsham West roundabout. • Sifting Item No. 4.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 4, from the future location of a proposed development driven Eynsham West Roundabout, the dualling continues online, travelling eastwards and aligns with the centre of the existing A40 carriageway until it ties in with the Eynsham Park & Ride Junction. The alignment impacts on an existing intermediate pressure gas main. •
5	Route Alignment 5	Three sub-sections of Road Alignments were developed and assessed for option 5, two were taken forward to Stage 2 sift: • Sifting Item No. 5.1: A40 Rural Dual Carriageway Alignment West Link - Option 5, alignment follows the same alignment as Option 1. • Sifting Item No. 5.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 5, alignment follows the same alignment as Option 4. •
6	Route Alignment 6	Three sub-sections of Road Alignments were developed and assessed for option 6, two were taken forward to Stage 2 sift: • Sifting Item No. 6.1: A40 Rural Dual Carriageway Alignment West Link - Option 6, alignment follows the same alignment as Option 1. • Sifting Item No. 6.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 6, alignment follows the same alignment as Option 4. •
7	Route Alignment 7	Three sub-sections of Road Alignments were developed and assessed for option 7, three were taken forward to the Stage 2 sift: • Sifting Item No. 7.1: A40 Rural Dual Carriageway Alignment West Link - Option 7, alignment follows the same alignment as Option 1. • Sifting Item No. 7.2: A40 Rural Dual Carriageway Alignment East Link - Option 7, alignment follows the same alignment as Option 4.

Ref	Options	Comment
		• Sifting Item No. 7.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 7, alignment follows the same alignment as Option 7. •
8	Route Alignment 8	Three sub-sections of Road Alignments were developed and assessed for option 8, of which three were taken forward to the Stage 2 sift: • Sifting Item No. 8.1: A40 Rural Dual Carriageway Alignment West Link - Option 8, alignment follows the same alignment as Option 7. • Sifting Item No. 8.2: A40 Rural Dual Carriageway Alignment East Link - Option 8, begins at the proposed Barnard Gate Junction and continues online eastwards, the alignment moves offline towards the north, just east of Home Farm coming back online in the vicinity of the future location of a proposed development driven Eynsham West roundabout. • Sifting Item No. 8.3: Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 8, is an online option from the future location of a proposed development driven Eynsham West Roundabout, the dualling continues travelling eastwards, and aligns with the centre of the existing A40 carriageway until it ties in with the Eynsham Park & Ride Junction. The alignment does not impact on an existing intermediate pressure gas main. •
9	Barnard Gate Junction	Initially four options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 9.1: Compact Grade Separated Junction – Option A, the footprint of this junction option is approximately 23492.5m2 with an overbridge of 36m span, which connects the proposed dual A40 from both the east and the west, the existing Barnard Gate North Road and the re-aligned Barnard Gate South Road • Sifting Item No. 9.4: Roundabout Option 2 – Option C, the footprint of this four-arm roundabout junction option is approximately 8887.6m2, which connects the proposed dual A40 from the west and east as well as the re-aligned Barnard Gate North and South side roads. •
10	Eynsham West Junction	This junction is a development driven junction and has been assessed as part of the scheme for future proofing purposes. Initially five options were developed and assessed, three were taken forward to the Stage 2 sift: • Sifting Item No. 10.1: Option 1 Roundabout (3-arm), connects the proposed east link from the west and the Option 2 Eynsham dual carriageway alignment from the east as well as a development road from the north. This applies to Road Alignment Option 2. • Sifting Item No. 10.3: Option 3 Roundabout (3-arm), connects the proposed east link from the west and Eynsham dual carriageway alignment from the east as well as a development road from the north. This applies to Road Alignment Options 4, 5, 6 and 7. • Sifting Item No. 10.4: Option 4 Roundabout (3-arm), connects the proposed east link from the west and the Option 8 Eynsham dual carriageway alignment from the east as well as a development road from the north. This applies to Road Alignment Option 8. •
11	Ambury Close Farm and Fir Tree Farm Access	Initially four options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 11.2: Option B, requires access to and from both Ambury Close Farm & Fir Tree Farm to come from Barnard Gate North Rd by the provision of a new road and an overbridge. • Sifting Item No. 11.3: Option C, provides a new access to both Ambury Close Farm & Fir Tree Farm by the provision of a new access track coming off the realigned Barnard Gate South road and runs parallel to the eastbound dual carriageway. Initial provision was for a single track with passing bays. However, following OCC consultation with Ambury Close Farm landowners, a two-way access track has been designed between Ambury Close Farm and the southern arm at Barnard Gate junction without passing bays. •
12	Barnard Gate Farm Access	Initially two options were developed and assessed, both were taken forward to the Stage 2 sift: • Sifting Item No. 12.1: Option A, maintains the existing access to Barnard Gate Farm. • Sifting Item No. 12.2: Option B, provides a new access to and from Barnard Gate Farm which connects the existing Barnard Gate North Road through to the proposed Barnard Gate Junction. •
13	Hill Farm Access	Initially four options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 13.2: Option B, provides an improved priority junction on the eastbound and westbound carriageway of the existing A40. • Sifting Item No. 13.3: Option C, closes the existing direct accesses onto the A40 with alternative access via a track running parallel to the proposed A40 eastbound dual carriageway and accessing the A40 via the proposed Barnard Gate junction. It is proposed that the access track will be a two-way road. •

Ref	Options	Comment
14	Home Farm Access	Initially four options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 14.1: Option A, the original access is stopped up. New access to Home Farm will be via a new access track connecting to the existing Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway. • Sifting Item No. 14.2: Option B, the original access is stopped up. The new access to Home Farm will be via a new access track connecting to the existing Barnard Lodge Farm track and Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway. •
15	Solar Farm/Field Access	Initially three options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 15.1: Option A, utilizes the existing farm access track by upgrading and extending it to take access directly from the westbound carriageway of the dual A40. • Sifting Item No. 15.2: Option B, provides access from the southern side of a future proposed development driven Eynsham West Roundabout with a new track westward towards and linking up with the existing access. •
16	Whitehouse Farm and Salutation Farm Access	Initially three options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 16.2: Option B, provides a new track utilising the existing A40 (as a result of the A40 dualling) connecting Whitehouse Farm and Salutation Farm to the proposed Barnard Gate Junction via the existing Barnard Gate Road for the A40. • Sifting Item No. 16.3: Option C, this option is similar to Option B except Whitehouse farm will utilise existing track behind its property to access the existing Barnard Gate Road. •
17	Chosley Farm Access	Initially two options were developed and assessed, both were taken forward to the Stage 2 sift: • Sifting Item No. 17.1: Option A, existing direct access to the A40 eastbound to remain, and access to A40 westbound carriageway will be via the proposed Barnard Gate junction. • Sifting Item No. 17.2: Option B, provides a new track running parallel to the A40 eastbound dual carriageway and connects the existing Hill Farm access track through the proposed access track connecting to the existing Barnard Gate Road for the A40. •
18	Lay-by Strategy	Initially four options were developed and assessed, two were taken forward to the Stage 2 sift: • Sifting Item No. 18.1: Option 1, involves provision of no new lay-by facilities along the A40 dualling section, alternatively exploring off-site provision. • Sifting Item No. 18.3: Option 3, proposes Type A lay-bys at locations along the eastbound and westbound dual carriageways with parking capacity equivalent to lost capacity of the impacted existing lay-bys. •

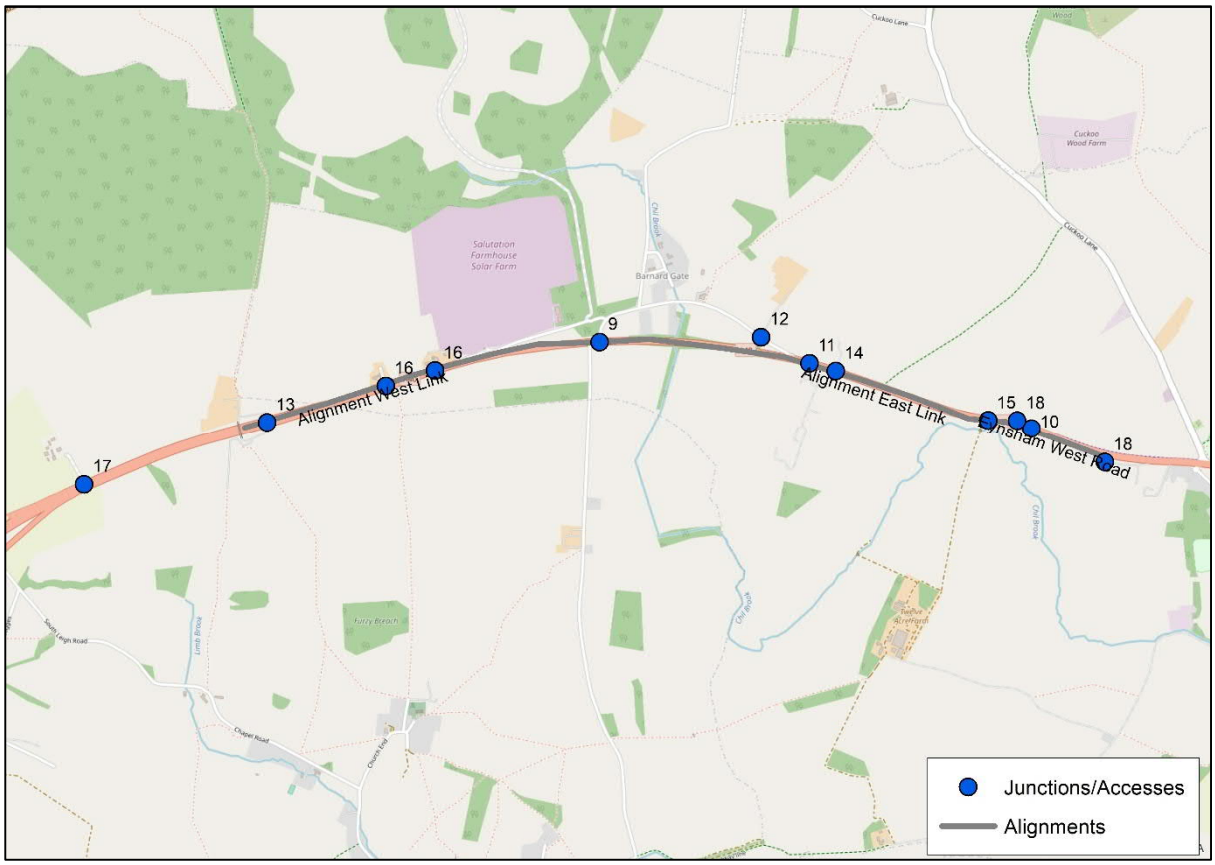


Figure 5-5 Location of Junctions and Alignments

5.6 Stage 2 – Detailed Sift

5.6.1 At this point the long list should only consist of the most feasible options. The purpose of the second sift is to sift the options against strategic, economic, financial, management and commercial criteria. This will help reach a short list using more detailed data and modelling results where available. Detailed assessment of options as part of Stage 2 sift is discussed in the next chapter.

6 Detailed Sift

6.1 Introduction

6.1.1 This chapter appraises and sifts the options taken forward based on the Stage 1 sift (see section 5.5). These options consist of the most feasible options, which will undergo further assessment (their benefits and issues) and the second sift. The Stage 2 sift involves a detailed assessment which is based on EAST (see section 5.2 for details on EAST), but adapted to suit the local context, key success criteria and key locally specific issues along A40 corridor.

6.1.2 The EAST supports this process and identifies high level criteria aligned with DfT's Option Assessment Framework, including a Strategic Case, Economic Case, Management Case, Financial Case and Commercial Case as set out in Table 6-1. More detailed criteria for each case is shown in **Appendix F**.

Table 6-1. Sift 2 Criteria

Criteria	Scoring	Description
Strategic Case	Very Good Impact (2) Good Impact (1) Neutral/No Impact (0) Poor Impact (-1) Very Poor Impact (-2)	Fit with project objectives and wider transport and government objectives. 11 sub-criteria were considered thus resulting in a maximum score of 22 for an option.
Economic Case		The scale of benefits arising from the improved transport network in terms of connectivity, reliability, resilience, housing, wider economic impacts, environmental and social impacts. 13 sub-criteria were considered thus resulting in a maximum score of 26 for an option.
Financial Case		Assessment of infrastructure capital costs, operating and maintenance costs. 2 sub-criteria were considered thus resulting in a maximum score of 4 for an option.
Management Case		Assessment of option feasibility and stakeholder and public accessibility 26 sub-criteria were considered thus resulting in a maximum score of 13 for an option.
Commercial Case		Flexibility of an option, funding and income potential. 1 sub-criteria were considered thus resulting in a maximum score of 2 for an option.

6.1.3 This assessment for all road alignments and junctions includes transport modelling, engineering, safety, transport planning, environment and other inputs/data that would help in appraising the options and undertake sifting in accordance to the EAST. The next sections provide description, detailed assessment and scoring of all the option considered in Sift 2. The full scoring for each option can be found in **Appendix G**.

6.2 Road Alignments

6.2.1 It should be noted that the Road Alignment Options include one option for each of the three sections of the alignment. Therefore, to effectively compare these options, the following section considers each of the three sections rather than comparing the overall options for the Road Alignment.

6.2.2 The figures showing the overall road alignments are below, followed by discussion of each of the three alignment sections.

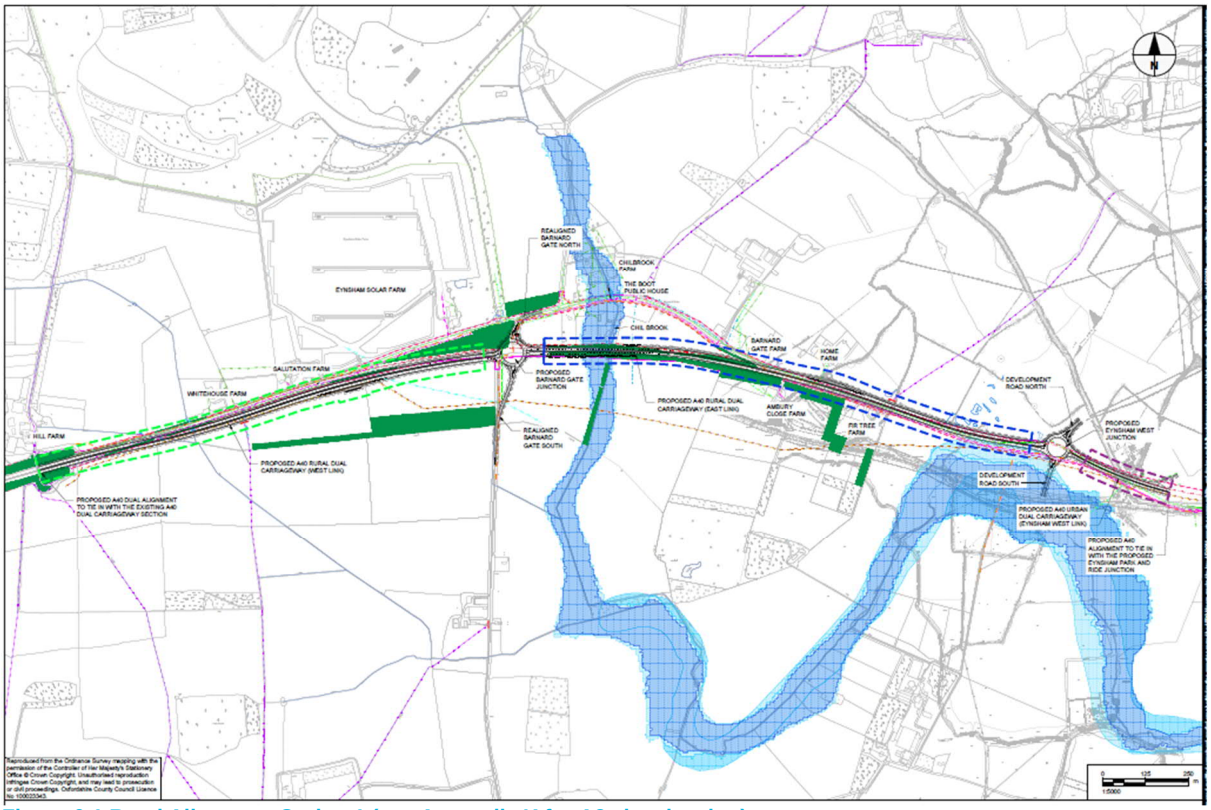


Figure 6-1 Road Alignment Option 1 (see Appendix K for A3 size drawing)

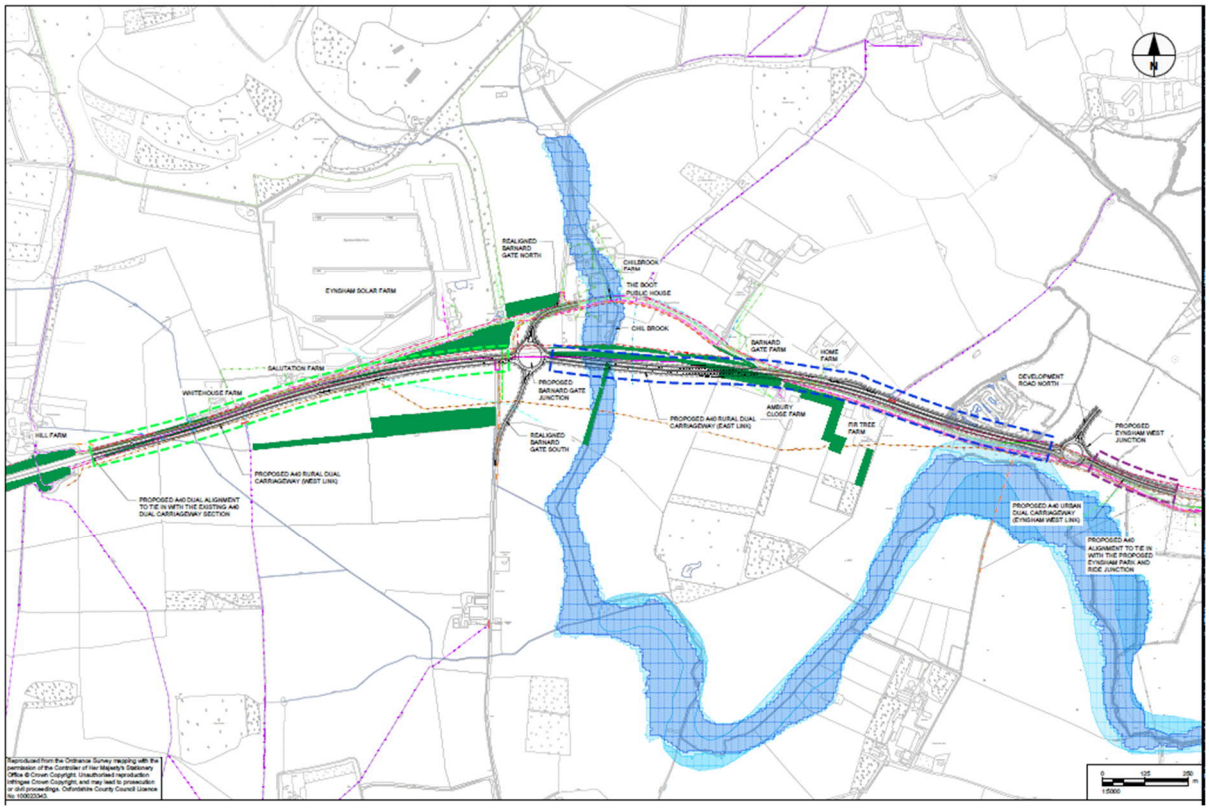


Figure 6-2 Road Alignment Option 2 (see Appendix K for A3 size drawing)

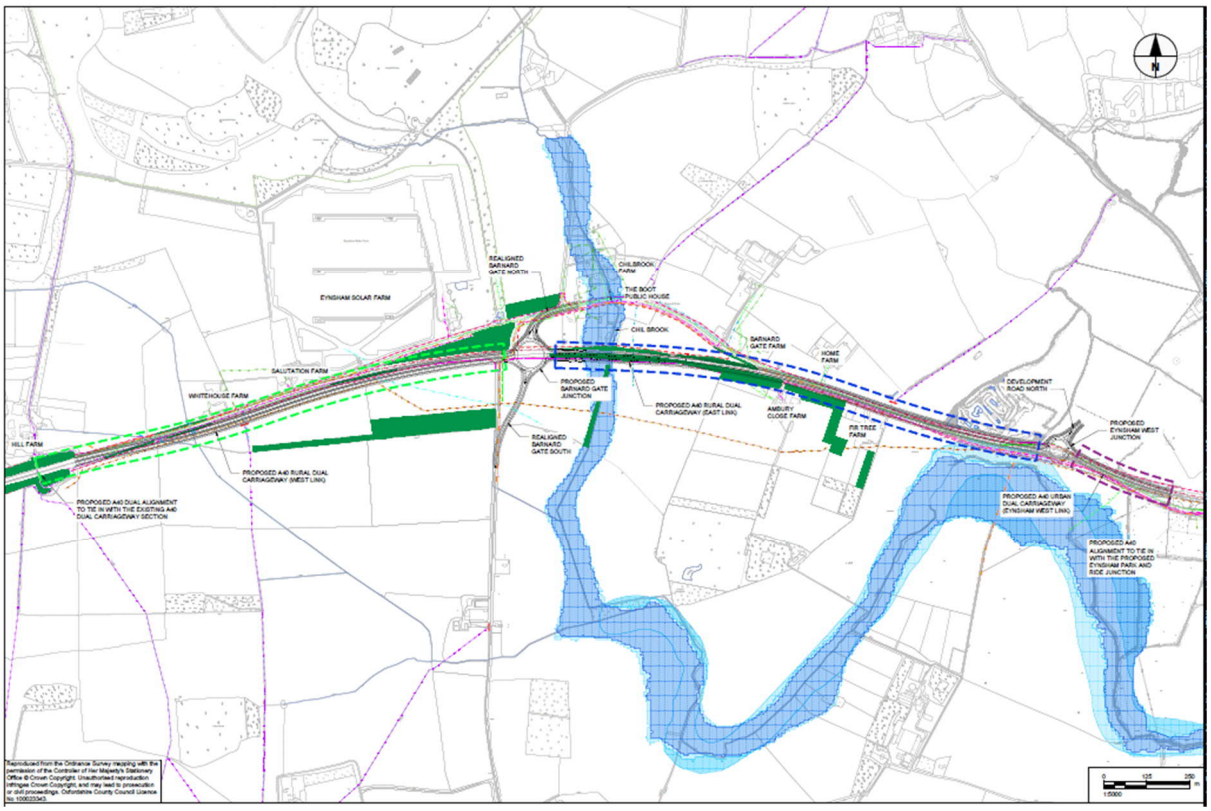


Figure 6-3 Road Alignment Option 4 (see Appendix K for A3 size drawing)

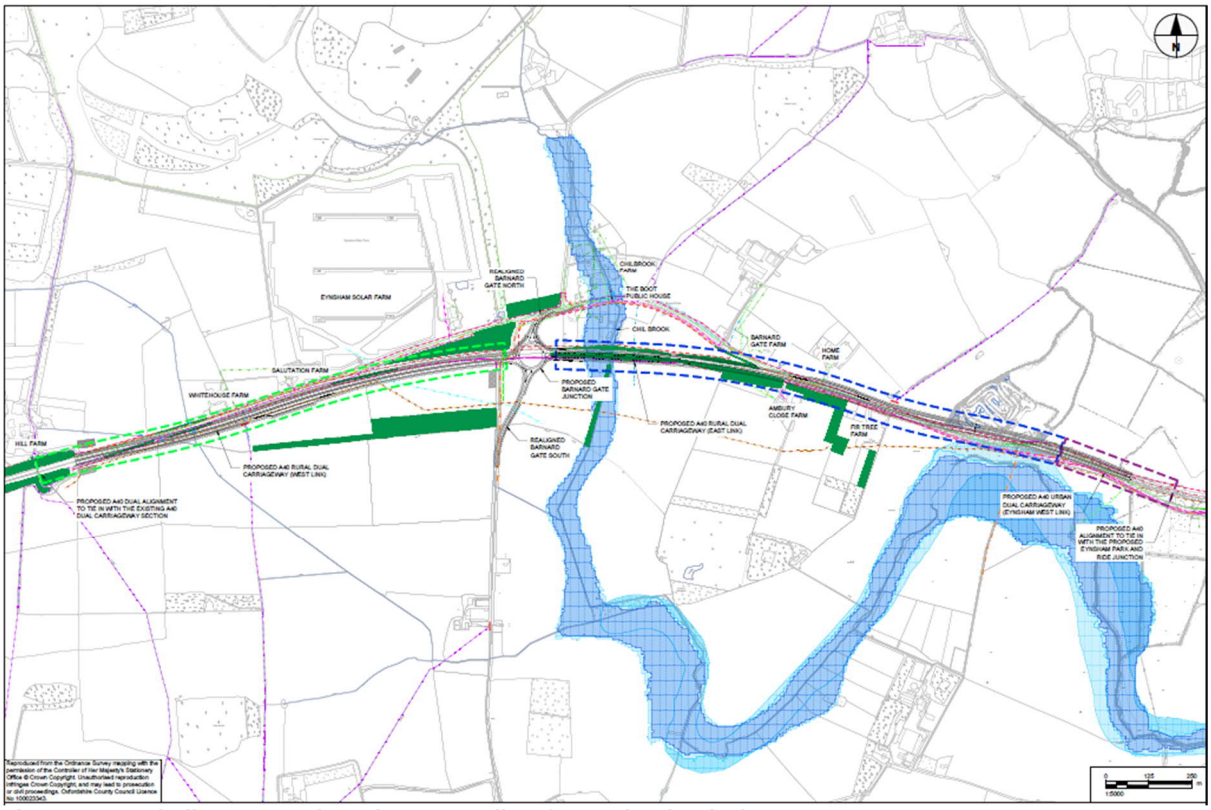


Figure 6-4 Road Alignment Option 8 (see Appendix K for A3 size drawing)

6.3 A40 Rural Dual Carriageway Alignment West Link

6.3.1 Two options (**Sifting Item Nos. 1.1 and 2.1**) are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 1.1: A40 Rural Dual Carriageway Alignment West Link – Option 1

6.3.2 Option 1.1 is the proposed online dualling of the A40 beginning at the tie-in to the existing dualled carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction. There is a proposed lay-by on the westbound carriageway opposite Salutation Farm, and possibility for tree planting or environmental barriers (acoustic noise barriers) subject to further development of the design between the proposed dualling and the existing A40 to provide screening for the properties north of the A40. This option allows use of the existing A40 to provide access for Whitehouse Farm and Salutation Farm to be maintained and access the A40 via the proposed Barnard Gate roundabout.

6.3.3 There is some overlap with the Dual Alignments for this link – Sifting Item Nos. 4.1, 5.1, 6.1, 7.1 and 8.1 are identical to Sifting Item No. 1.1.

6.3.4 Table 6-2 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-1 above shows Road Alignment 1, and the west link is outlined in green.

Table 6-2 Sifting Item No. 1.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
Alignment taken offline to facilitate the use of the existing A40 to provide non-direct access from Whitehouse Farm, Salutation Farm and potentially Hill Farm. Location of attenuation ponds to be outside of any fluvial or surface water flood risk areas or any flood compensation areas.	Two existing watercourses (Field Ditches) and 2 culverts will be affected by this proposed dual alignment. Access to Hill Farm from the eastbound and westbound carriageway is impacted by the proposed dual alignment.	Very strong strategic case score as this option aligns with the scheme objectives outlined in Table 4-5. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The option has a strong economic case as this option provides additional capacity and therefore will improve journey times along the A40. This option also

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route, and a new footway to connect existing PROW south of the dual alignment. North-south movement of NMU will be via the existing accommodation bridge near Hill Farm. Substantial extent of offline section allows for reduced traffic management requirements for construction. No departures from standard are attributed to this alignment option. The link alignment moved south to minimise impact on properties north of the A40. Hence, reduce impact on the farms during and post construction.	Alternative arrangements for all private means of accesses (PMA's) and field accesses onto the existing A40 will need to be provided. A large part of the dualling is off-line from the existing single carriageway alignment, therefore it is unlikely the existing surface water drainage network could be reused. Marginal existing vegetation is to be affected by the dualling. Existing utilities are affected. Land take will be required. Extents of the existing public right of way running parallel to the existing A40 will be affected.	improves existing NMU facilities and encourages sustainable forms of travel. The financial case has a weak score due to land take to the south of the A40. However, the offline arrangement of this option will reduce cost attributed to traffic management and environmental impact (noise, air quality, dust etc) mitigation during construction. The management case score is weak as it has a low score for stakeholder acceptability in relation to impact on existing utilities, land and properties. The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. Sifting Item No. 1.1, with an overall score of 26, has the best score for the dual west link design options. This option has very good scores for strategic, economic and commercial cases reflecting the journey time improvements the option provides. This option will minimise impacts to landowners and road users due to its offline arrangement, however it has low scores for financial and management cases. Design developments could help address some of the issues identified. Preferred design solution.

Option 2.1: A40 Rural Dual Carriageway Alignment West Link – Option 2

6.3.5 Sifting Item No. 2.1 is the proposed dualling of the A40 between Witney in the west and Oxford in the east begins at the tie-in to the existing dualled carriageway in the vicinity of Hill Farm accesses and continues online eastwards until it reaches the proposed Barnard Gate Junction. Existing direct access from Whitehouse & Salutation Farms removed and new access will be through the existing Barnard Gate Road and the proposed Barnard Gate junction.

6.3.6 Table 6-3 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-2 above shows Road Alignment 2 and the west link is outlined in green.

Table 6-3 Sifting Item No. 2.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
The proposed Barnard Gate East link dual carriageway (both directions) alignment follows the existing A40 alignment. Direct access from Whitehouse Farm and Salutation Farm to the A40 is to be removed, improving safety. Proposed alignment utilises a large extent of the existing single carriageway therefore the existing surface water drainage network may be able to be reused depending on its condition. Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route.	Access to Hill Farm from the eastbound and westbound carriageway is impacted by the proposed dual alignment. Two existing watercourses (Field Ditches) 2 culverts will be affected by this proposed dual alignment. Existing utilities affected by the dualling. Land take will be required.	Very strong strategic case score as this option aligns with the scheme objectives outlined in Table 4-5. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case has a strong score as it improves journey times and reliability, however there are likely to impact on non-motorised users and highway traffic including public transport as a result of online construction. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to existing properties located north of the A40.

Benefits	Issues	Sift against Business Case elements: Score and Comments
Existing vegetation is marginally or minimally affected by the dualling. Construction can be carried out using conventional traffic management. No departures from standard are attributed to this alignment option.		The management case has a very weak score. The link is mainly online, hence could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Difficulty to future expansion due to existing properties located north of the A40. The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. Sifting Item No. 2.1, with an overall score of 17, ranks second. This option has good scores for strategic, economic and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

6.4 A40 Rural Dual Carriageway Alignment East Link

6.4.1 Two options (**Sifting Item Nos. 4.2 & 8.2)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 4.2: A40 Rural Dual Carriageway Alignment East Link – Option 4

6.4.2 Sifting Item No. 4.2 is an online dualling option which begins at the proposed Barnard Gate Junction and continues online eastwards towards the future proposed development driven Eynsham West roundabout.

6.4.3 There is some overlap with the Dual Alignments for this link. In fact, Sifting Item No. 7.2 is identical to Sifting Item No. 4.2.

6.4.4 Table 6-4 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-3 above shows Road Alignment 4 and the east link is outlined in blue.

Table 6-4 Sifting Item No. 4.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. Proposed alignment moved north in the vicinity of Eynsham Motocross land to avoid the flood plain. Construction can be carried out using conventional traffic management. Existing grown vegetation to be maintained to screen properties including the property named 'The Bungalow' located north of the A40.	The introduction of tighter radius and associated superelevation on this alignment will incur increase maintenance cost (ex. Drainage assets along the central reserve and widened central reserve to accommodate visibility). The dual alignment will affect existing eastbound lay-by. Land take required. Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. Existing watercourse (Chill Brook) and flood plain and culvert will be affected. Chill	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case score is strong. This option performs well under the 'Impact to Environment' and 'Social and Distribution Impact' categories, however for water environment there will be medium to high surface water risk which could lead to flooding. Fluvial compensation areas may be required and has been assessed at a high level. Due to online arrangement of the alignment, there will possibly be greater impact on non-motorised users and highway traffic including buses during construction. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to existing properties along of the A40.

Benefits	Issues	Sift against Business Case elements: Score and Comments
	Existing utilities are affected by the dualling.	The management case has a very weak score. The link is mainly online, hence could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Difficulty in future expansion due to existing properties located north and south of the road. The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. With an overall score of 13, this option ranks second. This option has good scores for strategic, economic, and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

Option 8.2: A40 Rural Dual Carriageway Alignment East Link - Option 8

6.4.5 Sifting Item No. 8.2 begins at the proposed Barnard Gate Junction, continues online eastwards, and moves offline north of the A40 in the vicinity of Eynsham Motocross area, towards the location of the future proposed development driven Eynsham West roundabout.

6.4.6 Table 6-5 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-4 above shows this option, the East Link is outlined in blue.

Table 6-5 Sifting Item No. 8.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. Proposed alignment moved north in the vicinity of Eynsham Motocross land to avoid flood plain. Construction can be carried out using conventional traffic management. Existing grown vegetation to be maintained to screen properties including the property named 'The Bungalow' located north of the A40.	The introduction of tighter radius and associated superelevation on this alignment will incur increase maintenance cost (ex. Drainage assets along the central reserve and widened central reserve to accommodate visibility). The dual alignment will affect existing lay-by. Land take required. Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. Existing watercourse (Chill Brook) and flood plain and culvert will be affected. Chill Existing utilities are affected by the dualling.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case score is strong. This option alignment moves offline, just east of Fir Tree Farm to the north of the A40, as a result it will reduce the complexity of traffic management and impact on highway traffic during construction. With regards to the water environment, the alignment is positioned north of the existing A40, away from the flood plain of an existing watercourse located south of the A40. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to existing properties along of the A40. The management case has a very weak score. The online section of the alignment could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Difficulty for future expansion due to existing properties located north and south of the road.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. With a score of 18 based on the cumulative business case elements, this option is the best performing option. This option had a comparative higher score for the economic case. It should be noted that though this option showed negative management case, the issues can be managed as part of the scheme development process. Preferred design solution.

6.5 A40 Urban Dual Carriageway Alignment (Eynsham West Link)

6.5.1 Three options (Sifting Item Nos. **1.3, 4.3 & 8.3**) are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 1.3: A40 Urban Dual Carriageway Alignment (Eynsham West Link) – Option 1

6.5.2 Sifting Item No. 1.3 is an online dualling from the future proposed development driven Eynsham West Roundabout, runs eastwards until it ties in with the Eynsham Park & Ride junction.

6.5.3 There is some overlap with the Dual Alignments for this link. In fact, Sifting Item No. 2.3 is identical to Sifting Item No. 1.3.

6.5.4 Table 6-6 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-1 above shows Road Alignment 1, and the west link (east of future proposed development driven Eynsham junction) is outlined in purple.

Table 6-6 Sifting Item No. 1.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway. Construction can be carried out using conventional traffic management.	Existing utilities are affected by the dualling. Land take required.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case score is strong. This option alignment is online with the centre of the new road the same as the existing A40 carriageway. This will require complex traffic management and diversionary works for road traffic and utilities. The SGN intermediate pressure gas mains will be affected. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to developments located north and south of the A40. Potential increase in cost for utility diversions.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		The management case score has a very weak score. The link is mainly online, hence could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Difficulty for future expansion due to existing developments located north and south of the road. The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. With an overall score of 22 this option ranks second for this alignment section. This option has good scores for strategic, economic and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

Option 4.3: A40 Urban Dual Carriageway Alignment (Eynsham West Link) – Option 4

6.5.5 Sifting Item No. 4.3 is an online dualling from the future proposed development driven Eynsham West Roundabout runs eastwards until it ties in with the Eynsham Park & Ride junction.

6.5.6 There is some overlap with the Dual Alignments for this link. In fact, Sifting Item Nos. 5.3, 6.3 and 7.3 are all identical to Sifting Item No. 4.3.

6.5.7 Table 6-7 below outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-3 above shows Road Alignment 4 and the west link (east of future proposed development driven Eynsham junction) is outlined in purple.

Table 6-7 Sifting Item No. 4.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway. Construction can be carried out using conventional traffic management.	Existing utilities are affected by the dualling. Land take required.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case score is strong. This option alignment is online with the centre of the new road the same as the existing A40 carriageway. This will require complex traffic management and diversionary works for road traffic and utilities. The SGN intermediate pressure gas mains will be affected. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to developments located north and south of the A40. The management case score has a very weak score. The link is mainly online, hence could have greater impact on preparation and management during construction. Possible objection from stakeholders

Benefits	Issues	Sift against Business Case elements: Score and Comments
		(landowners, utility companies etc.) due to impacts on utilities and land. Difficulty for future expansion due to existing developments located north and south of the road. The commercial case score is strong as it meets funding criteria and will support committed schemes in the corridor. With an overall score of 22 this option ranks second for this alignment section. This option has good scores for strategic, economic and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

Option 8.3: A40 Urban Dual Carriageway Alignment (Eynsham West Link) - Option 8

6.5.8 Sifting Item No. 8.3 is an online dualling option from the future proposed development driven Eynsham West Roundabout and runs eastwards until it ties in with the Eynsham Park & Ride Junction.

6.5.9 Table 6-8 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction). Figure 6-4 above shows this option and the west link (east of future proposed development driven Eynsham junction) is outlined in purple.

Table 6-8 Sifting Item No. 8.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway. Construction can be carried out using conventional traffic management.	Existing utilities are affected by the dualling. Land take required.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. The economic case score is strong. This option alignment is online with the westbound carriageway maintained on the existing A40 carriageway. This will allow for ease of construction, traffic management and diversionary works for road traffic and utilities. The SGN intermediate pressure gas mains are not affected by the road alignment. The financial case score is weak due to high costs associated with diversionary works and possibly complex traffic management. Potential for blight claims due to proximity of the road alignment to developments located north and south of the A40. The management case has a very weak score. The link is mainly online, hence could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Difficulty for future expansion due to existing developments located north and south of the road. The commercial case score is strong as it meets funding criteria and will support committed schemes in the corridor.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		With a score of 26 this is the best performing option for the A40 urban dual carriageway alignment (Eynsham West Link). This option has a very good score for strategic, economic, and commercial case. Design developments could help reduce some of the issues identified. Preferred design solution.

6.6 Barnard Gate Junction

6.6.1 Two options (Sifting Item Nos. **9.1 and 9.4)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 9.1: Compact Grade Separated Junction - Option A

6.6.2 Sifting Item No. 9.1 connects the proposed offline A40 dual carriageway from both the east and west, the improved Barnard Gate North and South roads. This layout moves the A40 dual alignment to the south of the existing A40 (single carriageway).

6.6.3 Figure 6-5 below shows this option. Table 6-9 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

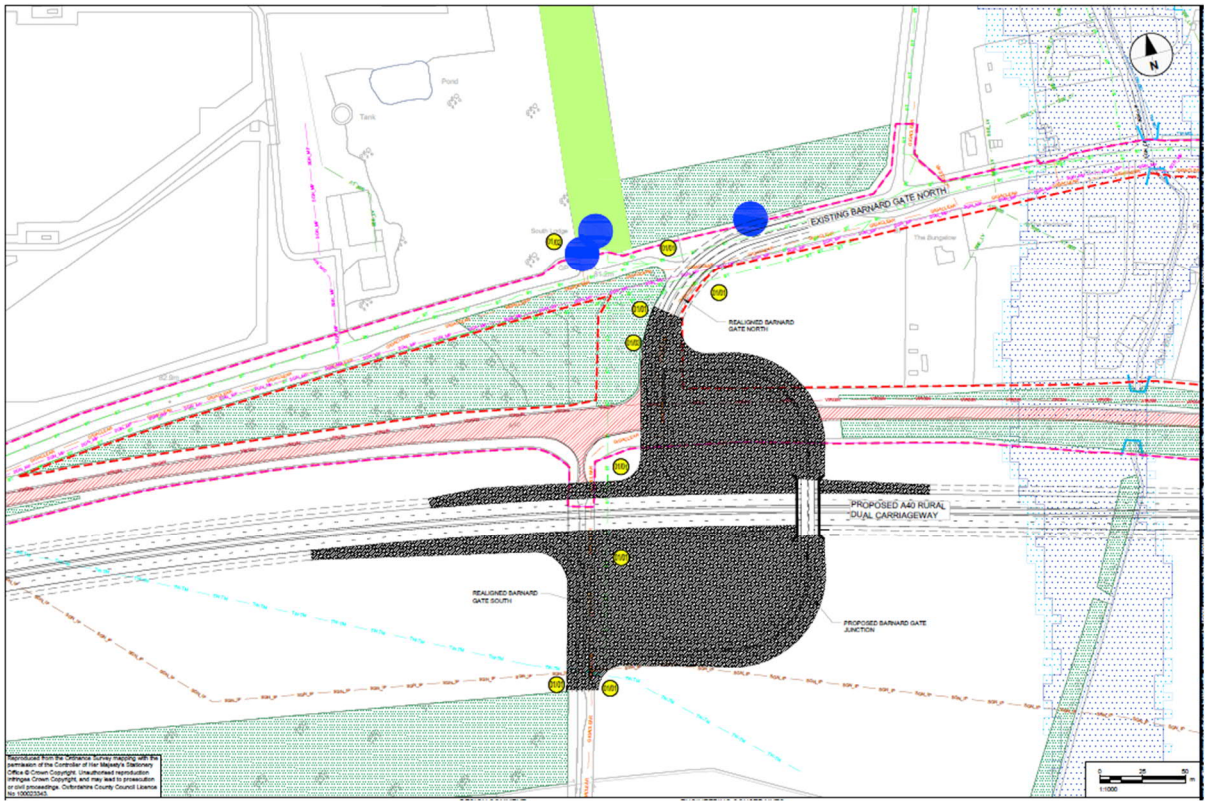


Figure 6-5 Sifting Item No. 9.1 – Compact Grade Separated Junction

Table 6-9 Sifting Item No. 9.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
The proposed junction provides an overbridge that could be used by non - motorised users (NMU) to cross the A40. Mainly offline construction using appropriate traffic management.	The junction footprint is approximately 23492.5m^2, and greater in comparison to the other junction option.. This will require additional land take. This has the largest impermeable area for the 2 options. The junction bridge drainage and embankment drainage will also be required. Existing utilities are affected. Grade 2 listed buildings and sites and conservation areas could be impacted during and post construction (visual	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. This option has a very weak economic case score. The junction layout requires an overbridge and high earthworks. This will visually impact surrounding properties and local landscape. With regards to social and distribution impact, there is security concerns as it relates to the overbridge becoming a suicide spot. The junction footprint could have significant impact on land and vegetation especially trees. The junction construction could require complex traffic

Benefits	Issues	Sift against Business Case elements: Score and Comments
	intrusion) of Barnard Gate Grade Separated Junction. Existing watercourse (ditch) on the northbound approach to the grade separated junction will be affected and will require re-routing or culverting. Land take required	management and impact on non-motorised users and road traffic. The financial case has a very weak score due to very high costs as a result of high embankments and structures associated with the junction design. The cost for traffic management and diversions may be high. The management case score is very weak. The junction layout could hinder future expansion of the A40. There could be higher levels of noise and dust during construction of earthworks and structures required for the junction. Possible for disturbance claims from surrounding properties during and post construction. Diversion of SGN intermediate pressure gas mains required. The commercial case score is strong as it will support committed development schemes in the corridor. However, the junction design may impact on construction programme. Overall, this option scores 1 and ranks second. This option will support committed schemes in the corridor outlined under the strategic and commercial cases. However, it has weak scores for the economic, financial and management cases and is considered to have significant impact on land and landowners, environment, road users and utilities during and post construction.

Option 9.4: Roundabout Option 2 – (Option C)

6.6.4 Sifting Item No. 9.4 is a roundabout which connects the proposed A40 dual carriageway from both the east and west, the realigned Barnard Gate North and South roads.

6.6.5 Figure 6-6 below shows this option. Table 6-10 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

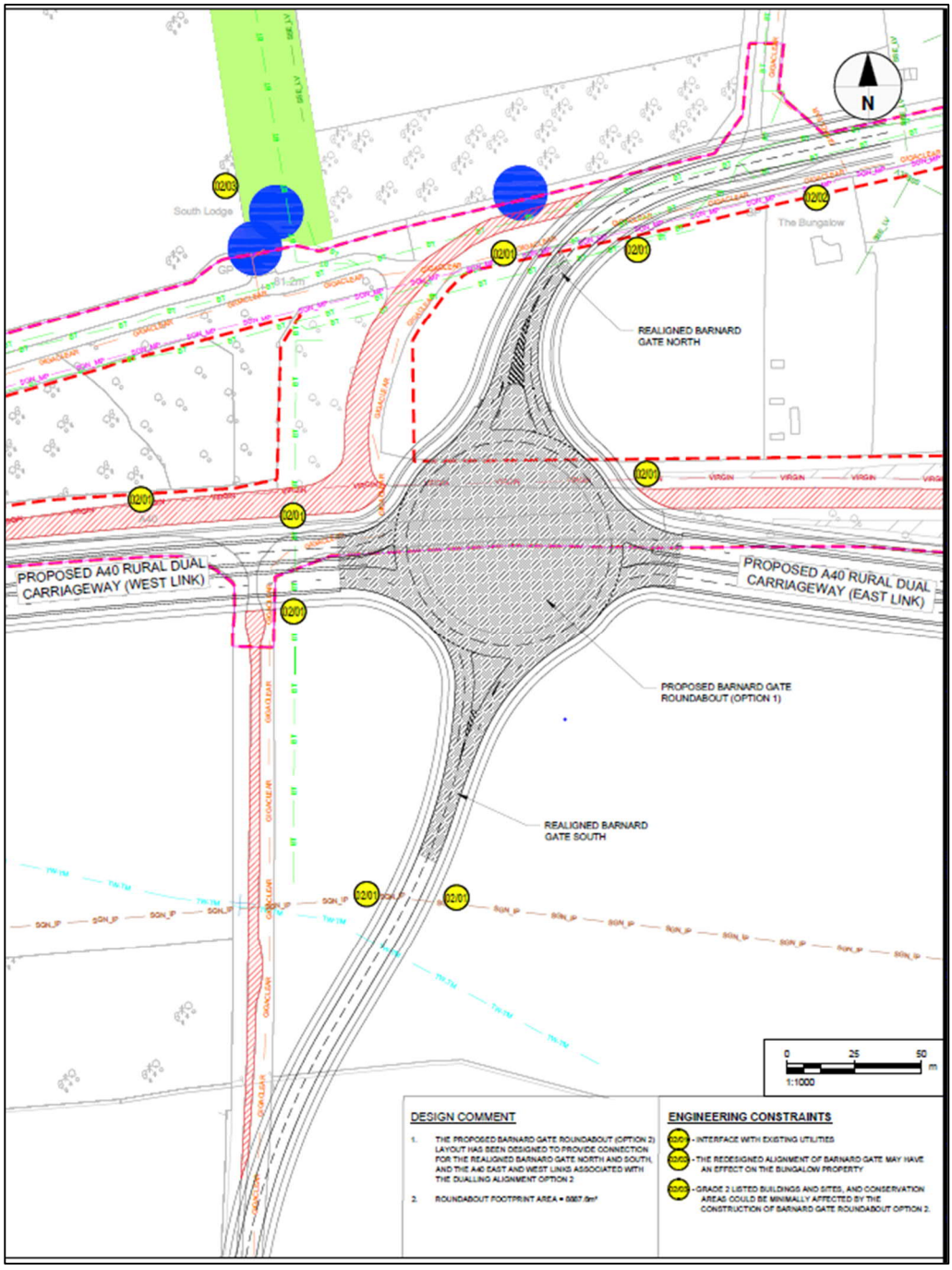


Figure 6-6 Sifting Item No. 9.4 – Roundabout Option 2 (Option C)

Table 6-10 Sifting Item No. 9.4

Benefits	Issues	Sift against Business Case elements: Score and Comments
The junction footprint is approximately 8887.6m^2 .	The redesigned alignment of Barnard Gate may have an adverse effect on the property named “The Bungalow”.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times.

Benefits	Issues	Sift against Business Case elements: Score and Comments
Construction can be carried out using conventional traffic management.	Existing utilities are affected. Grade 2 listed buildings and sites and conservation areas could be impacted by the construction of Barnard Gate Roundabout Option 2. Existing watercourse (ditch) on the northbound approach to the roundabout will be affected and will require re-routing or culverting. Land take required	This option also has a very strong economic case score as it provides safe access to the A40 for local traffic. The junction layout is considered to have minimal impact to road users including non-motorised users, landowners and surrounding properties. Low impact on land, utilities, and the environment during construction. The financial case has a very weak score. Although, it is considered that the cost for traffic management during construction will not be high. However, this option requires additional land take outside of the existing highway boundary. The management case has a strong score, as the junction improves access to the A40 for local dwellings and adjacent farms in the area. Minimal impact on road users during construction. The commercial case score is very strong as it meets funding criteria and will support committed schemes in the corridor. With an overall score of 31 this is the best performing option for the Barnard Gate Junction. This option has a very good strategic and economic cases. Design developments could help reduce some of the issues identified. Preferred design solution.

6.7 Future Proposed Development Driven Eynsham West Junction (Garden Village Development Access)

6.7.1 Funding for this development junction will not be provided by OCC and that the option development of the roundabout has been undertaken in consultation with the developer. If the roundabout is not built as part of the A40 Smart Corridor scheme, the preferred option will be used to future proof the dual carriageway alignment.

6.7.2 Three options (Sifting Item Nos. **10.1, 10.3 and 10.4)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 10.1: Roundabout (3-arm) applies to Dual Option 2

6.7.3 Sifting Item No. 10.1 is a 3-Arm Roundabout Option connects the proposed rural dual carriageway from the west and urban dual carriageway from the east as well as a future development road from the north. This option is only applicable to Route Alignment Option 2.

6.7.4 Table 6-11 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction).

Table 6-11 Sifting Item No. 10.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
The future development driven northern arm utilises the developer proposed access alignment.	Existing utilities are affected by the dualling.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This

Benefits	Issues	Sift against Business Case elements: Score and Comments
Construction can be carried out using conventional traffic management.		encourages safer travel and improves free flow of traffic and journey times. This option has a very strong economic case score as the junction design performs well under the 'Impact on the Environment', 'Impact on the Economy', and 'Social and Distribution Impact' categories. However, there are potential impact on trees and habitats, and road users which can be mitigated as the design develops. The financial case score is very weak, as the junction layout will require land take from both developments north and south of the A40. The cost of additional land may delay or stop further development of the A40 dualling. The roundabout provides three arms with no arm to the development south of the roundabout. This may increase cost of blight claims from the Developers. Increase in cost of utility diversion as the SGN intermediate pressure gas main is affected by the junction layout. The management case score is very weak as the junction design precludes an additional arm to the development south of the A40. This may trigger blight claims from the Developer. Utility diversion especially SGN intermediate pressure gas mains could delay scheme programme. The commercial case score is very strong as it meets funding criteria and will support committed schemes in the corridor. Overall, this option scores 25, ranking last in comparison to the other future development driven Eynsham West junction options. This option has good scores for strategic, economic and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

Option 10.3: Roundabout (3-arm) applies to Dual Option 4, 5, 6 and 7

6.7.5 Sifting Item No. 10.3 is a 3-Arm Roundabout Option connects the proposed rural dual carriageway from the west and urban dual carriageway from the east as well as a future development road from the north. This option is only applicable to Route Alignment Options 4, 5, 6 and 7.

6.7.6 Table 6-12 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction).

Table 6-12 Sifting Item No. 10.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Less land take from development land compared to the roundabout (3-arm) that applies to dual option Construction can be carried out using conventional traffic management.	Existing utilities are affected by the dualling. The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. This option has a very strong economic case score as the junction design performs well under the 'Impact on the Environment', 'Impact on the Economy', and

Benefits	Issues	Sift against Business Case elements: Score and Comments
		'Social and Distribution Impact' categories. However, there are potential impact on trees and habitats, and road users which can be mitigated as the design develops. The financial case has a very weak score, as the junction layout will require land take from the development north of the A40. The cost of additional land is considered minimal compared to the land requirements for the junction design associated with dual option 2. The roundabout provides three arms with no arm to the development south of the arm. This may increase cost of blight claims from the Developers. The cost for utility diversion is considered minimal as the SGN intermediate pressure gas main is not affected by the junction layout. The management case score is very weak as the junction design precludes the additional arm to the development south of the A40. This may trigger blight claims from the Developer. Also, the cost of additional land for the junction layout may delay or stop further development of the A40 dualling. Minimal impact on programme, as utility diversion for the junction design does not include diversion of the SGN intermediate pressure gas main. The commercial case score is very strong as it meets funding criteria and will support committed schemes in the corridor. Overall, this option score 26, ranking second in comparison to the other Eynsham West junction options. This option has good scores for strategic, economic, and commercial cases. However, it does not perform well in the financial or management cases due to its online arrangement.

Option 10.4: Roundabout (3-arm) applies to Dual Option 8

6.7.7 Sifting Item No. 10.4 is a 3-Arm Roundabout Option connects the proposed rural dual carriageway from the west and urban dual carriageway from the east as well as a future development road from the north. This option is only applicable to Route Alignment Option 8.

6.7.8 Table 6-13 outlines potential benefits, issues and EAST assessment scores (against the other options of this junction).

Table 6-13 Sifting Item No. 10.4

Benefits	Issues	Sift against Business Case elements: Score and Comments
Less land take from development land compared to the roundabout (3-arm) that applies to dual option 2. Roundabout design moved north away from Barclays land south of the existing A40 Construction can be carried out using conventional traffic management.	The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design. Existing utilities are affected.	Very strong strategic case score as this option aligns with the scheme objectives. The link alignment does not provide direct access to properties. This encourages safer travel and improves free flow of traffic and journey times. This option has a very strong economic case score as the junction design performs well under the 'Impact on the Environment', 'Impact on the Economy', and 'Social and Distribution Impact' categories. However, there are potential impact on trees and habitats, and

Benefits	Issues	Sift against Business Case elements: Score and Comments
		road users which can be mitigated as the design develops. The financial case has a very weak score, as the junction layout will require land take from the development north of the A40. The cost of additional land is considered minimal compared to the land requirements for the junction design associated with dual option 2. The roundabout provides three arms with no arm to the development south of the arm. This may increase cost of blight claims from the Developers. The cost for utility diversion is considered minimal as the SGN intermediate pressure gas main is not affected by the junction layout. The management case score is strong as the junction design does not preclude the additional arm to the development south of the A40. Also, the cost of additional land for the junction layout may delay or stop further development of the A40 dualling. Minimal impact on programme, as utility diversion for the junction design does not include diversion of the SGN intermediate pressure gas main. The commercial case score is very strong as it meets funding criteria and will support committed schemes in the corridor. Overall, with a score of 33 this option is the best performing option for the West Eynsham Junction. Preferred design solution. This option has good scores for strategic, economic, management and commercial cases. Design developments could help reduce some of the issues identified. Preferred design solution.

6.8 Ambury Close Farm & Fir Tree Farm Access Options

6.8.1 Two options (Sifting Item Nos. **11.2 and 11.3)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.8.2 A trip generation survey has been carried out for the existing accesses, which indicates that 18 trips a day would use the Ambury Close Farm access[21]. For Fir Tree Farm, survey data showed that an average of 115 vehicles access the site each day[22]. The survey data for the accesses is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

6.8.3 Furthermore, a review of recent collisions at Ambury Close Farm Access and Fir Tree Farm Access shows there have only been a few accidents near to the accesses over the five years from 2016 to 2020. There were two slight collisions on the A40 near to the accesses. Collision maps for these accesses as well as for Barnard Gate Farm and Hill Farm can be found Appendix J.

6.8.4 It should be noted that Option D provided an access arrangement to the west to link with the western roundabout, but this was discounted at the initial sifting process. This ensured that this option did not progress to the EAST assessment and as a result was not discussed in this document.

Option 11.2: Access Option B

6.8.5 Sifting Item No. 11.2 requires access to and from both Ambury Close Farm & Fir Tree Farm to come from Barnard Gate North Road by the provision a new road and an overbridge.

6.8.6 Figure 6-7 below shows this option. Table 6-14 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

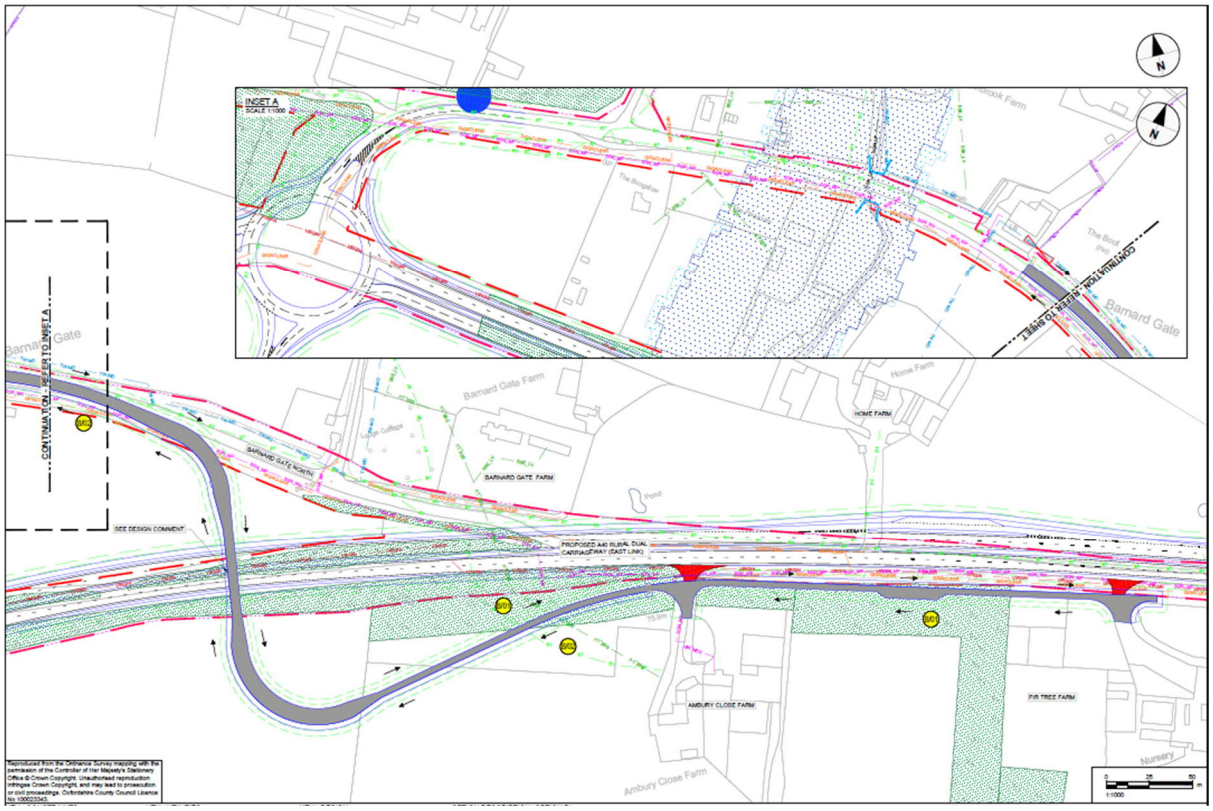


Figure 6-7 Sifting Item No. 11.2 – Access Option B

Table 6-14 Sifting Item No. 11.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management. Safe access to the A40 via the new Barnard Gate roundabout.	Existing vegetation affected. Existing utilities are affected. Impermeable area is greater than Option C. Land take required.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a very weak economic case score. The junction layout requires an overbridge and high earthworks. This will visually impact surrounding properties and local landscape. With regards to social and distribution impact, there is security concerns as it relates to the overbridge becoming a suicide spot. The footprint could have significant impact on land and vegetation especially trees. The financial case has a very weak score due to very high costs as a result of high embankments and structures associated with the access design. The management case score is very weak. The accommodation bridge could hinder future expansion of the A40. There could be higher levels of noise, air quality and dust during construction of earthworks and structures required for the access. Possible for disturbance claims from surrounding properties during and post construction. This option would also impact on utilities. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. With a score of -21 this is the worst performing option for Ambury Close and Fir Tree Farm Accesses.

[21] This is lower than the observed figure of an average of 46 vehicles a day. However, as the Trip Generation Technical Note outlines, this discrepancy is thought to be due to a range of factors such as Ambury Close Farm being a larger farm than in the database and farming events taking place over the surveyed period.
[22] It was not possible to find trip data for any similar land uses as Fir Tree Farm, so this is reliant on surveyed data. It is worth noting that Fir Tree Farm has a Christmas Tree Centre operating at the site, and as the surveys were completed in December 2020, it is likely this average daily figure is much higher than for other months.

Option 11.3: Access Option C

6.8.7 Sifting Item No. 11.3 provides a new access to both Ambury Close Farm & Fir Tree Farm by the provision of a new access track with passing bays which comes off the re-aligned Barnard Grade South Road, south of the roundabout, and runs parallel to, and south of the eastbound carriageway to Fir Tree Farm.

6.8.8 Figure 6-8 below shows this option. Table 6-15 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

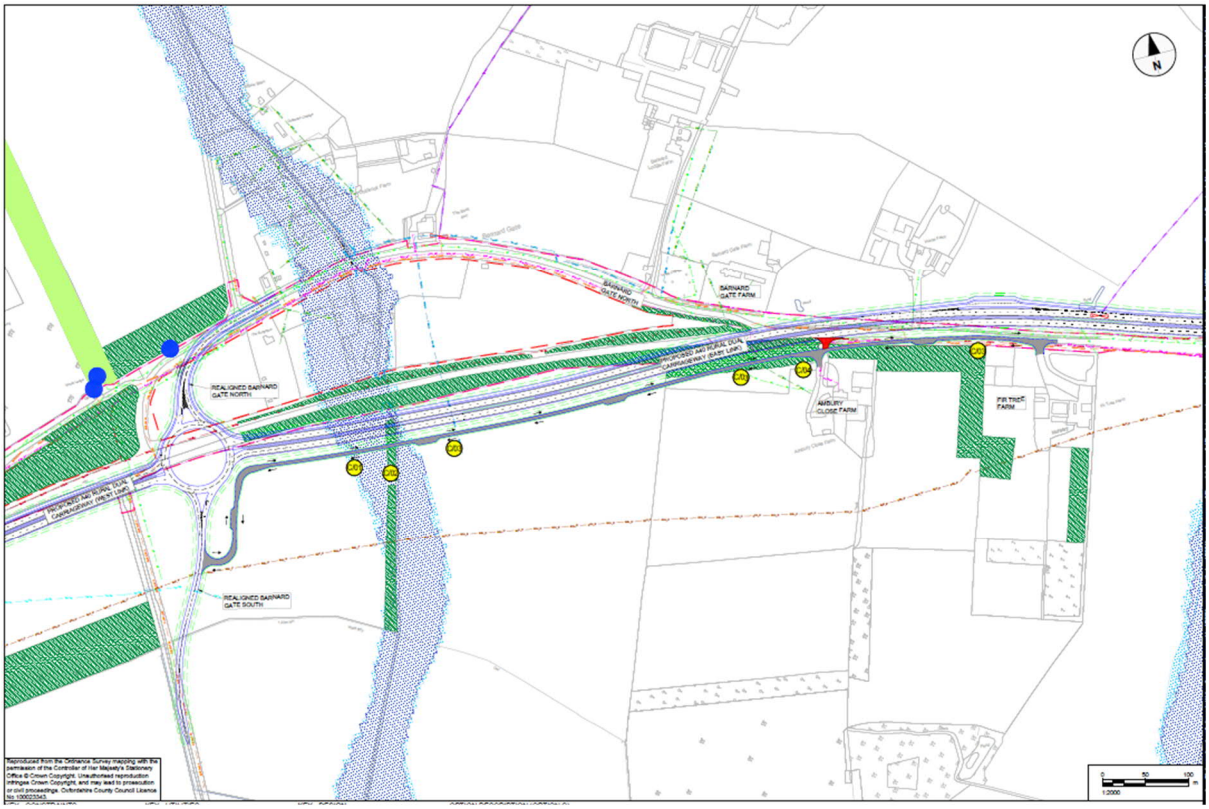


Figure 6-8 Sifting Item No. 11.3 – Access Option C

Table 6-15 Sifting Item No. 11.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management. Safe access to the A40 via the new Barnard Gate roundabout. Minimal impact on utilities.	Flood plain area affected. Existing watercourse - Chill Brook - affected. Existing vegetation affected. Land take required.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a weak economic case score. The access geometry requires a culvert across Chill Brook as well as crossing the existing flood plain. With regards to the water environment, there will be medium to high surface water risk which could lead to flooding. Fluvial compensation areas may be required and has been assessed at a high level. The footprint could have significant impact on land and vegetation especially trees. The financial case score is very weak as this access option requires land take and a structure (culvert). Also, earthworks cost may increase due to construction on Chill Brook flood plain. The management case score is very strong. The offline arrangement of this access option is considered to have minimal impact on the A40 traffic during

Benefits	Issues	Sift against Business Case elements: Score and Comments
		construction. Hence, minimal traffic management is required. Minimal impact on utilities. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores 0 overall and is the best performing option for the Ambury Close Farm and Fir Tree Farm Access. Preferred design solution.

6.9 Barnard Gate Farm Access

6.9.1 Two options (Sifting Item Nos. **12.1 and 12.2)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.9.2 A trip generation survey has been carried out for the existing access, which indicates that 4 trips per day would use this access[23]. The survey data for the access is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

6.9.3 Furthermore, a review of recent collisions at Barnard Gate Farm Access shows that there has been one serious accident at the access in the five years from 2016 – 2020. There were two slight collisions on the A40 near to the access over this time. However, it is unlikely these can be attributed to the Barnard Gate Farm Access. Collision maps for this Access as well as for Ambury Close Farm, Fir Tree Farm and Hill Farm can be found in Appendix J.

Option 12.1: Access Option A

6.9.4 Sifting Item No. 12.1 utilises the existing access to Barnard Gate Farm. This option is only applicable to Route Alignment Options 2, 4, 5, 7 and 8.

6.9.5 Figure 6-9 below shows this option. Table 6-16 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

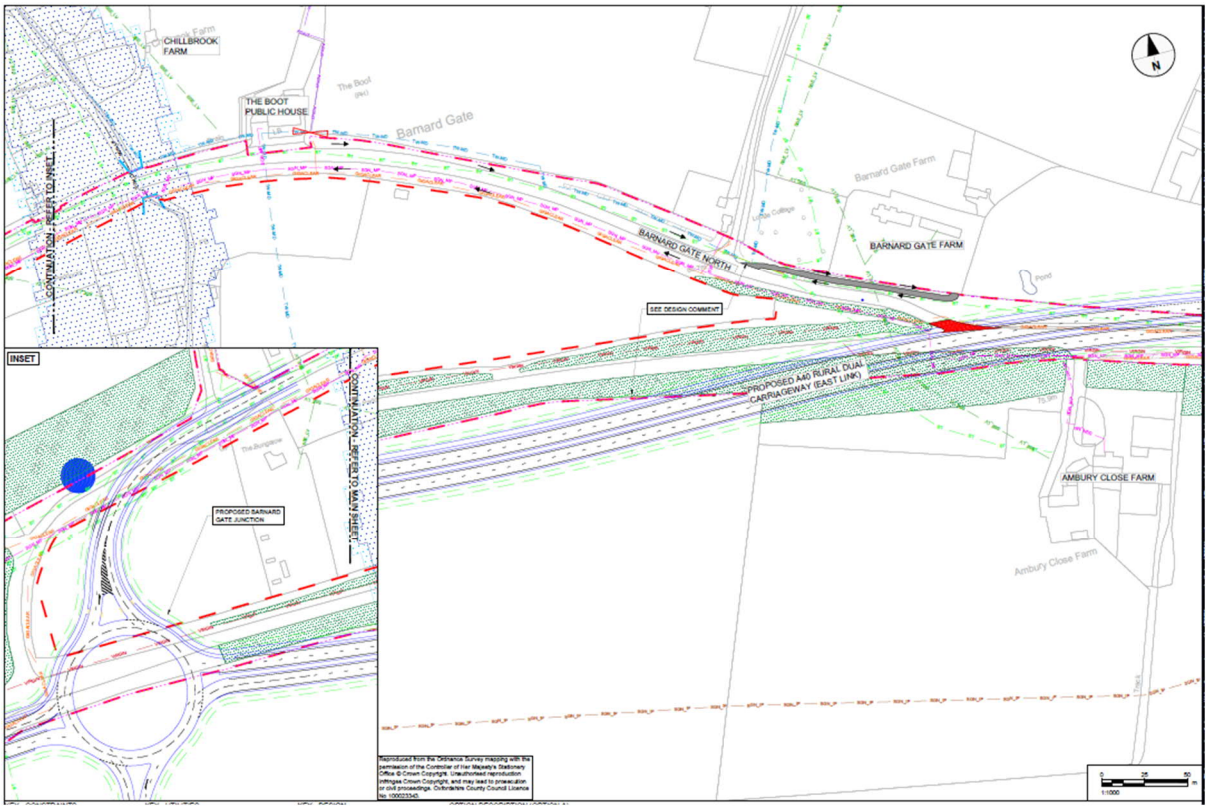


Figure 6-9 Sifting Item No. 12.1 – Access Option A

Table 6-16 Sifting Item No. 12.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
Existing access is unchanged. Impermeable area unchanged. No land take required.	Minor construction works to stop-up existing Barnard Gate North Road access to the A40.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a very strong economic case score due to no construction cost as well as improved access to

[23] This is lower than the 10 observed trips from survey data and this may be due to additional dwellings or farming activities taking place on site that are not immediately apparent.

Benefits	Issues	Sift against Business Case elements: Score and Comments
No utilities diversions. Safe access to the A40 via the new Barnard Gate roundabout.		the A40 dual carriageway for the farm. The existing utilities are not affected. The financial case has a neutral score as there is no change in cost as this maintains the existing layout and no impact on existing utilities. The management case has a very strong score due to improved access to the A40. No additional costs associated with construction and utilities diversion. Neutral commercial case score, as this option remains unchanged as the existing access is maintained. Overall, this option scores 6, which makes it the best performing option for Barnard Gate Farm Access. Preferred design solution.

Option 12.2: Access Option B

6.9.6 Option 12.2 provides a new access to and from Barnard Gate Farm which connects the existing Barnard Gate North Road through to the proposed Barnard Gate Junction. This option is only applicable to Route Alignment Options 1 and 6.

6.9.7 Figure 6-10 below shows this option. Table 6-17 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

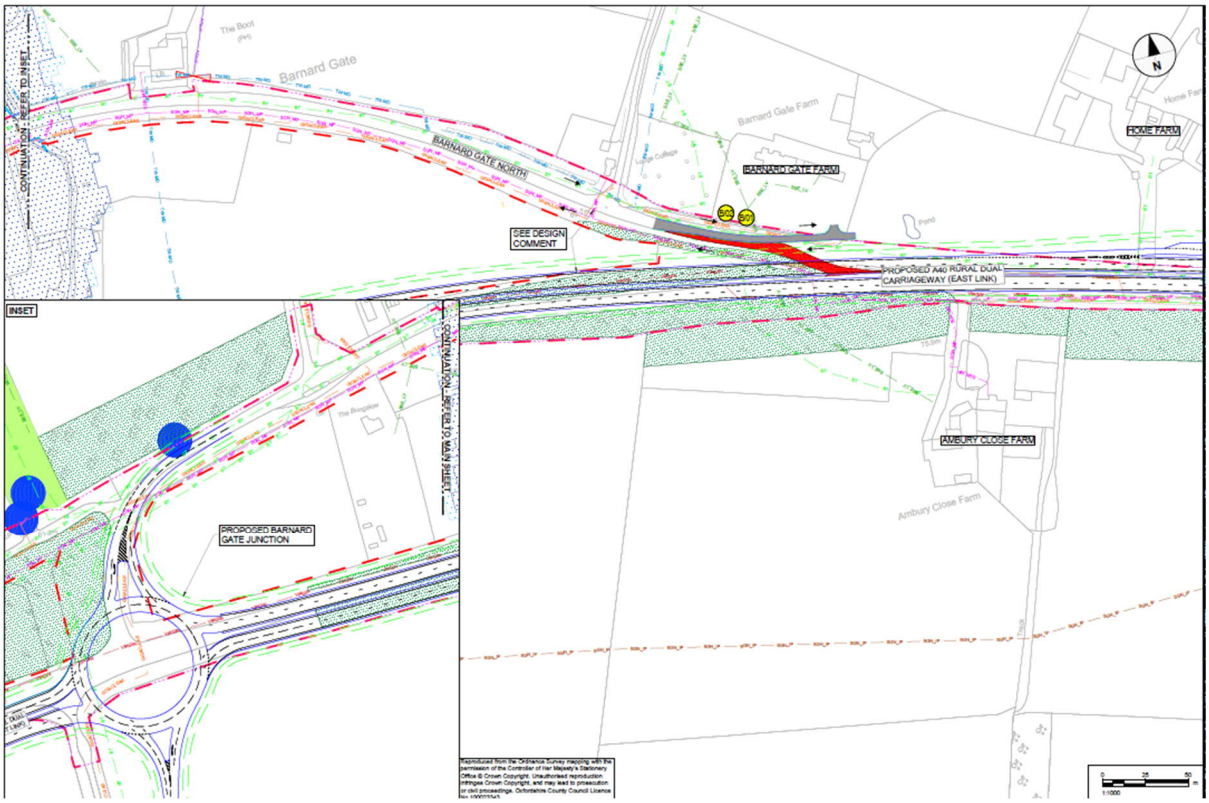


Figure 6-10 Sifting Item No. 12.2 – Access Option B

Table 6-17 Sifting Item No. 12.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Construction can be carried out using conventional traffic management. Safe access to the A40 via the new Barnard Gate roundabout.	Existing utilities are affected. Existing retaining wall across the front of Barnard Gate affected by the new access provision Increased impermeable area. Land take required.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a neutral economic case score due to construction cost for a new access and extended stopping up of the existing Barnard Gate North Road access to the A40. The financial case has a very weak score as there is a change in cost to construct the new access and this will also include land take and utilities diversions. This will require additional maintenance. The management case has a very weak score as there is a change in cost to construct the new access and this will also include land take and utilities diversions. This will require additional maintenance. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		This option scores -4, making it the worst performing option for Barnard Gate Farm access options.

6.10 Hill Farm Access

6.10.1 Two options (Sifting Item Nos. **13.2 and 13.3)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.10.2 A trip generation survey has been carried out for the existing accesses, which indicates that 84 trips a day would use this access[24]. The full survey data for the accesses is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

6.10.3 Furthermore, a review of recent collisions at Hill Farm Access shows there is a concentration of accidents near to the Hill Farm access. The majority of these are slight, but there is one serious collision. However, it is important to note that these collisions may also be related to the road reducing from a dual carriageway to a single carriageway. Collision maps for this Access as well as Ambury Close Farm, Fir Tree Farm and Barnard Gate Farm accesses can be found in Appendix J.

Option 13.2: Access Option B

6.10.4 Sifting Item No. 13.2 provides new slip roads on the dualled eastbound and westbound carriageway to provide left in left out only access and connects back into the existing access roads for Hill Farm.

6.10.5 Figure 6-11 below shows this option. Table 6-18 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

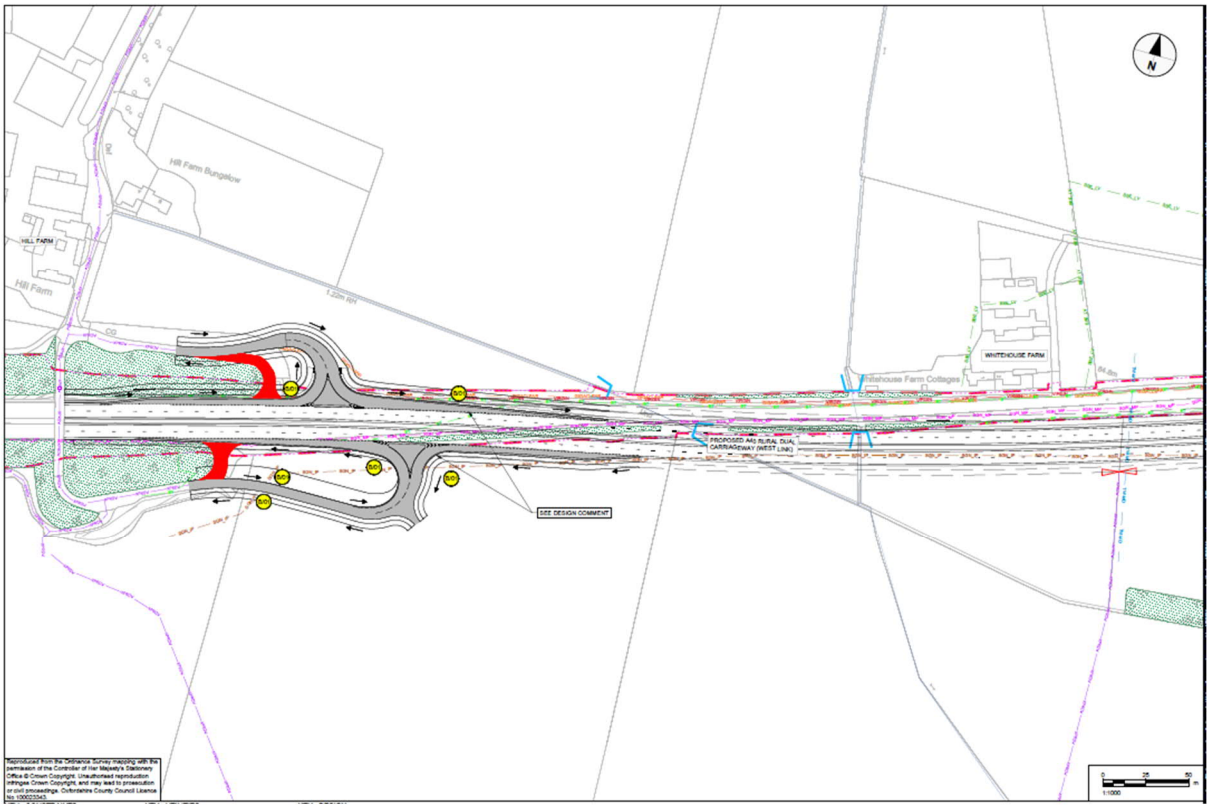


Figure 6-11 Sifting Item No. 13.2 – Option B

Table 6-18 Sifting Item No. 13.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management.	Existing substandard weaving length between the Hill Farm North & South Accesses and Witney junction east facing slip roads.	Neutral strategic case score as this option has a neutral impact on the scheme objectives.

[24] This is much lower than the observed figure of an average of 1,149 vehicles a day. However, as the Trip Generation Technical Note outlines, this discrepancy is thought to be due to general traffic use this junction to make U-turns to access Witney, as the Shores Green Junction east of Witney is not all-movement junction.

Benefits	Issues	Sift against Business Case elements: Score and Comments
	The south direct access could trigger a departure due to substandard spacing between the proposed westbound Type A lay-by and Barnard Gate Junction. New dual carriageway speeds will be 70mph and therefore merging traffic will be more difficult and could lead to potential collisions. Mainline traffic because of the low usage of the junction could become complacent and with a lack of concentration may lead to potential collisions. Existing utilities are affected. Existing public right of way affected. Increase in impermeable area. Land take required.	The economic case has a very weak score. This option has a significant impact on local landscape and on grown trees and habitats. The financial case has a very weak score. This option layout will require permanent land take with increase cost for the new access arrangement and therefore increased maintenance cost. The management case score is very weak as there is the possibility for landowner to reject this option due to land take. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores -8, making it the worst performing option for Hill Farm Access.

Option 13.3: Access Option C

6.10.6 Sifting Item No. 13.3 closes the existing direct accesses onto the A40 with alternative access via a track running parallel to the proposed A40 eastbound dual carriageway and accessing the A40 via the proposed Barnard Gate junction. It is proposed that the access track will be a two-way road. This option is only applicable to Route Alignment Options 1, 4, 5, 6, 7 and 8.

6.10.7 Figure 6-12 below shows this option. Table 6-19 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

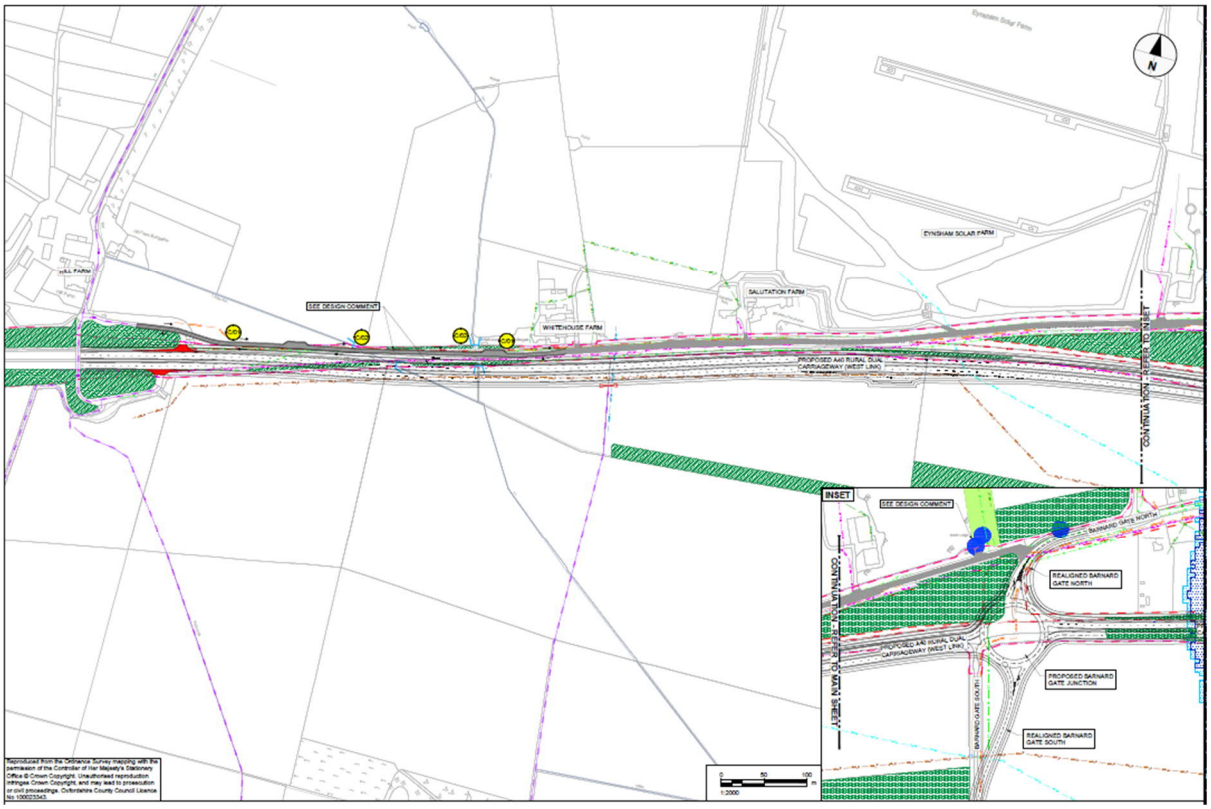


Figure 6-12 Sifting Item No. 13.3 – Option C

Table 6-19 Sifting Item No. 13.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
May be able to reuse existing drainage as follows existing road alignment. Mainly offline construction using appropriate traffic management. Safe access to the A40 via the new Barnard Gate roundabout.	Existing utilities are affected. Existing watercourses (field ditches) and culverts affected. Land take required. Increase in journey times for Hill Farm vehicles.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is strong. This option provides improved access with minimal impact to the farms/ field/ residential properties. The financial case score is very weak. This option layout will require permanent land take with increase cost for the new access arrangement and therefore increased maintenance cost. The management case score is very strong. This option provides improved access with minimal impact to the farms/ field/ residential properties. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		This option scores 2 making it the best performing option for Hill Farm access. Preferred design solution.

6.11 Home Farm Access

6.11.1 Two options (Sifting Item Nos. **14.1 and 14.2)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.11.2 A trip generation survey has been carried out for the existing access. The survey data for the access is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

Option 14.1: Access Option A

6.11.3 Sifting Item No. 14.1 is where the original access is stopped up. New access to Home Farm will be via a new access track connecting to the existing Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway. This option is only applicable to Route Alignment Options 2, 4, 5, 7 and 8.

6.11.4 Figure 6-13 below shows this option. Table 6-20 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

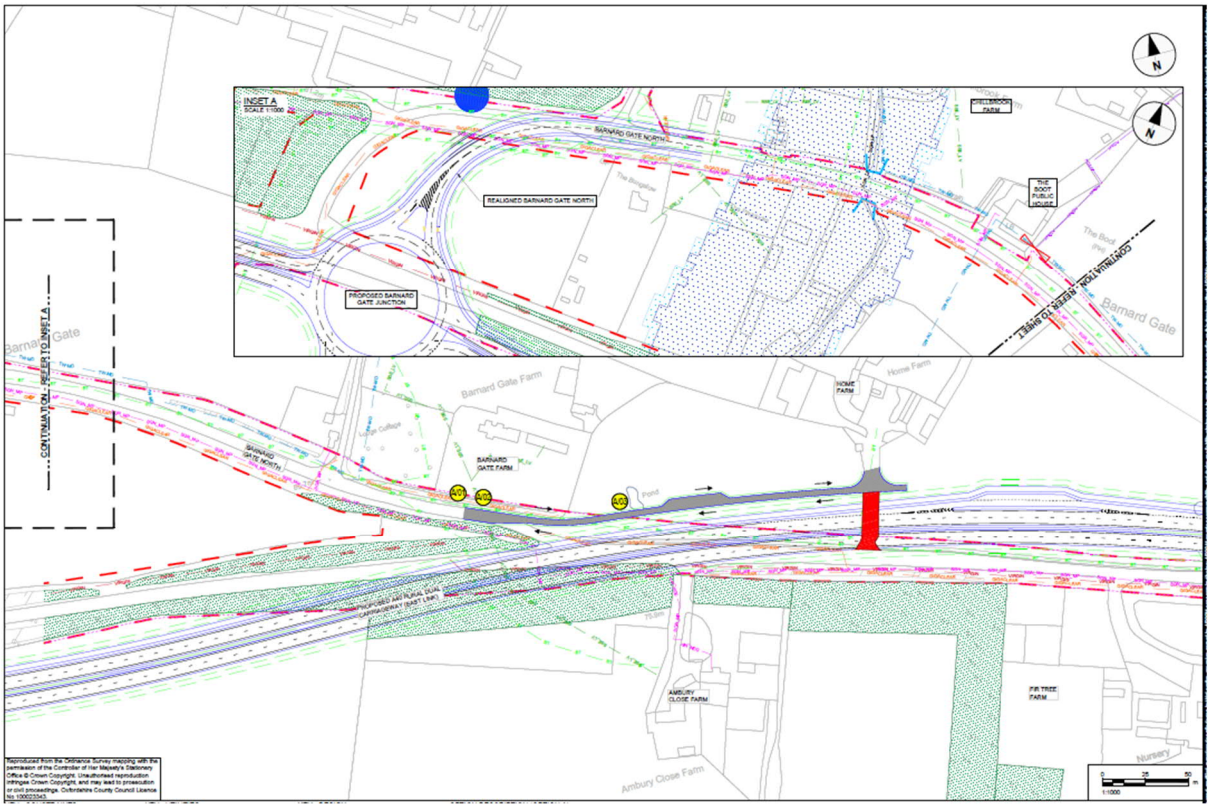


Figure 6-13 Sifting Item No. 14.1 – Access Option A

Table 6-20 Sifting Item No. 14.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management.	Existing utilities are affected. Land take required.	Neutral strategic case score as this option has a neutral impact on the scheme objectives.

Benefits	Issues	Sift against Business Case elements: Score and Comments
Safe access to the A40 via the new Barnard Gate roundabout.	Existing pond affected. Increase in impermeable area. Existing retaining wall extension required.	This option has a neutral economic case score due to construction cost for a new access and extended stopping up of the existing Home Farm access to the A40. The financial case has a very weak score as there is a change in cost to construct the new access and this will also include land take and utilities diversions. This will require additional maintenance. The management case score is strong as it improves access for Home Farm. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores 1 making it the best performing option for Home Farm access. Design developments could help reduce some of the issues identified. Preferred design solution.

Option 14.2: Access Option B

6.11.5 Sifting Item No. 14.2 is where the original access is stopped up. The new access to Home Farm will be via a new access track connecting to the existing Barnard Lodge Farm track and Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway.

6.11.6 Figure 6-20 below shows this option. Table 6-21 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

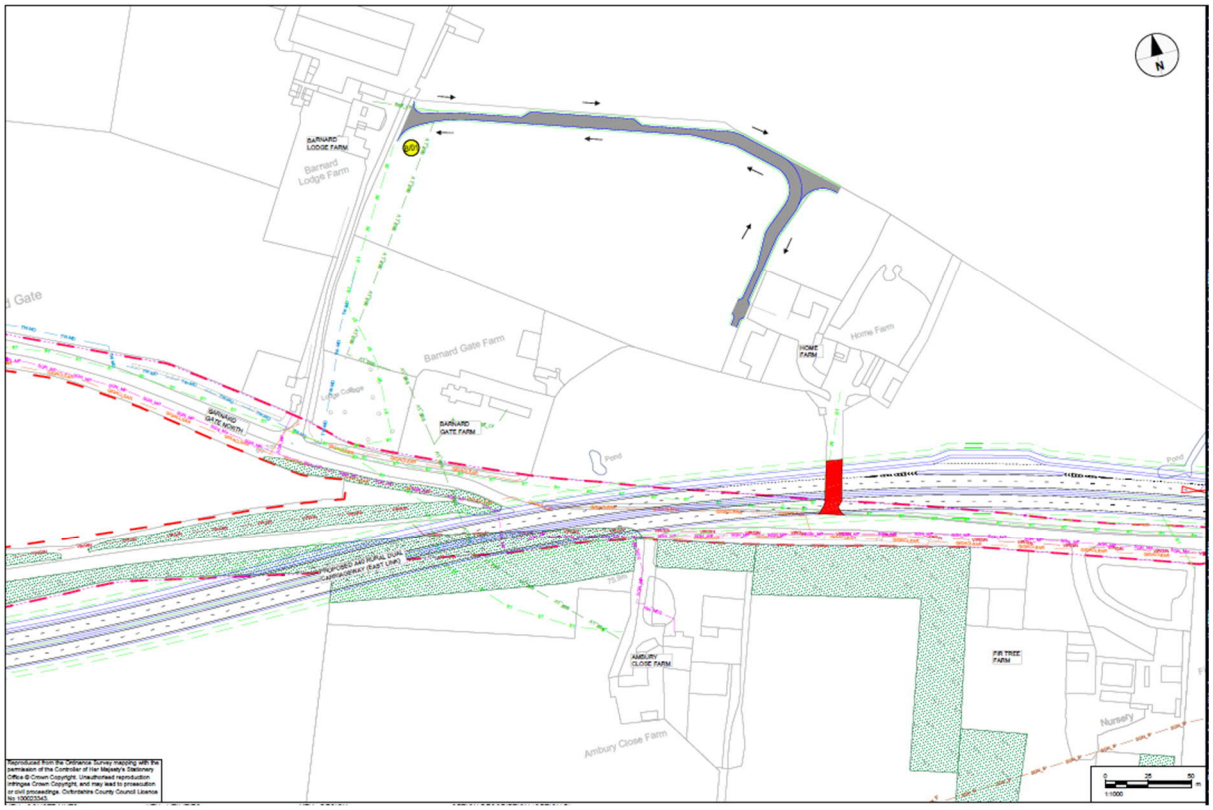


Figure 6-14 Sifting Item No. 14.2 – Access Option B

Table 6-21 Sifting Item No. 14.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management. Safe access to the A40 via the new Barnard Gate roundabout.	Existing utilities are affected. Increased impermeable area . Land take required . This option requires rights to use a third party's private access and may not be agreed by the owner. The location of this access will overlook the Barnard Gate Farm property. This could be a privacy issue for the owners of Barnard Gate Farm.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is very strong. This option provides improved access to the A40. The financial case score is very weak. The length of the access would incur a high construction cost. This option requires rights to use a third party's private access and would incur cost. The management case score is very weak. The location of this access will overlook the Barnard Gate Farm property. This could be a privacy issue for the owners of Barnard Gate Farm. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		This option scores -4, ranking second compared to the other Home Farm access option.

6.12 Solar Farm/Field Access

6.12.1 Two options (Sifting Item Nos. **15.1 and 15.2)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

Option 15.1 Access Option A

6.12.2 Sifting Item No. 15.1 utilizes the existing farm access track by upgrading and extending it to take access directly from the westbound carriageway of the dual A40.

6.12.3 Figure 6-15 below shows this option. Table 6-22 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

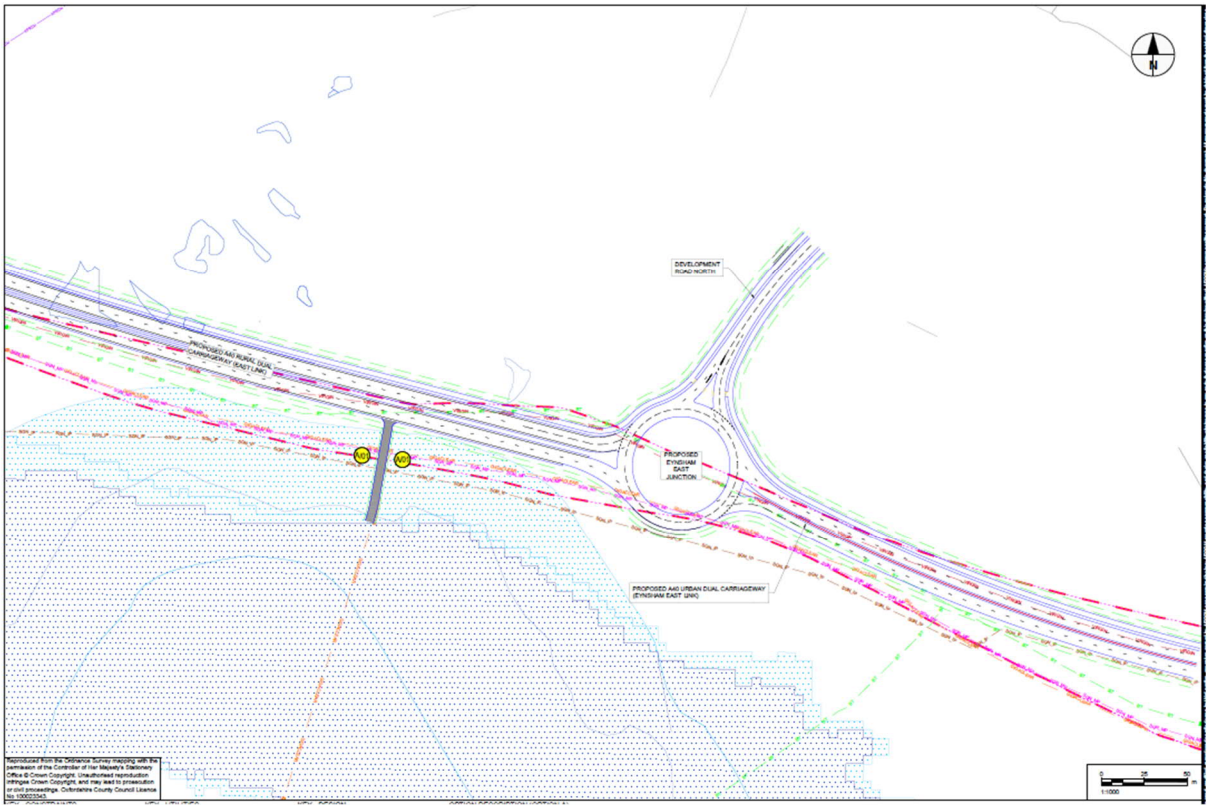


Figure 6-15 Sifting Item No. 15.1 – Access Option A

Table 6-22 Sifting Item No. 15.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
Direct access to the A40 dual carriageway from Solar Farm. No land take required. Offline construction using appropriate traffic management. Low seasonal usage.	Existing utilities will need protecting. Existing Flood Plain will be affected.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is strong as this option performs well under the 'Impact on the Economy' and 'Social and Distribution Impact' categories. The financial case score is neutral. The new access arrangement is very similar to the existing, hence no impact on capital, operation and maintenance costs.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		The management case score is very strong as this option requires no land take or utility diversion. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores 6, making this the highest scoring option for the Solar Farm/Field Access. Design developments could help reduce some of the issues identified. Preferred design solution

Option 15.2 Access Option B

6.12.4 Sifting Item No. 15.2 provides access from the southern side of the future proposed development driven Eynsham West Roundabout with a new track westward and linking up with, the existing access. This option is only applicable to a roundabout design where a southern arm to future developments south west of Eynsham is not provided.

6.12.5 Figure 6-16 below shows this option. Table 6-23 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

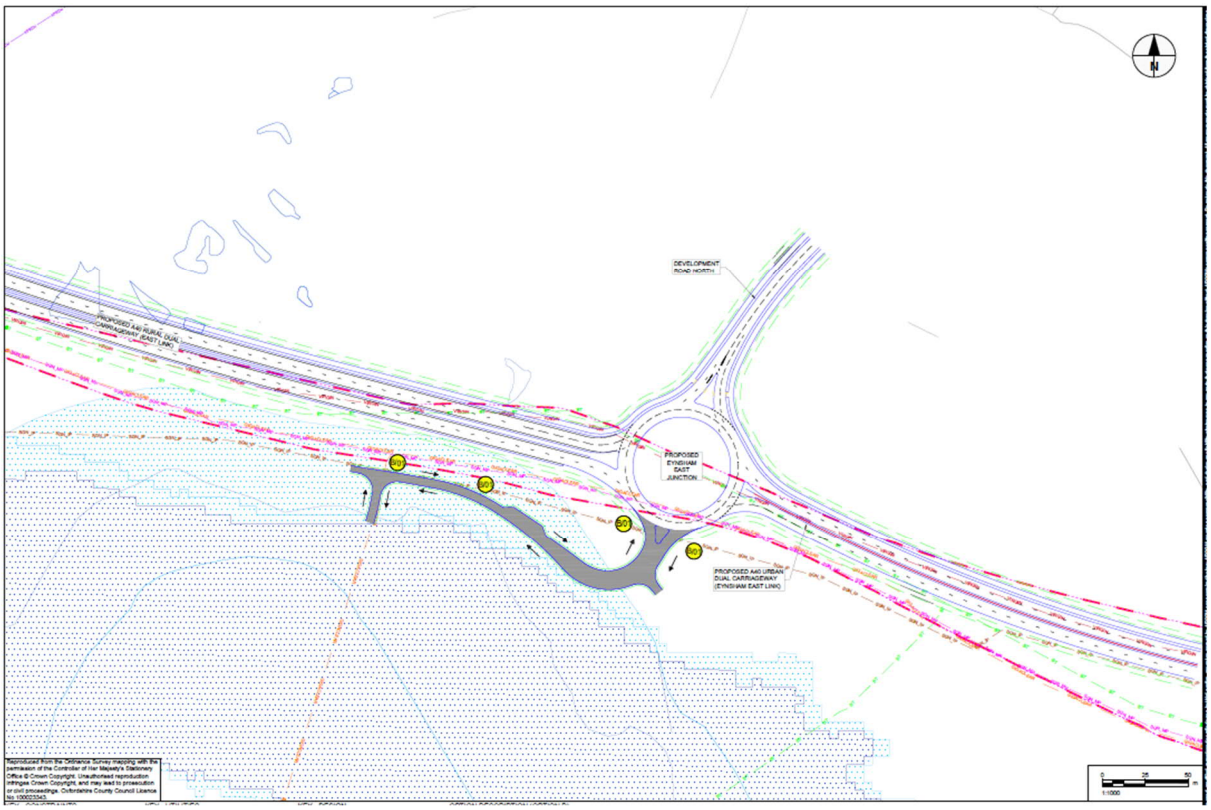


Figure 6-16 Sifting Item No. 15.2 – Access Option B

Table 6-23 Sifting Item No. 15.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Offline construction using appropriate traffic management. Low seasonal usage.	Existing utilities are affected. Land take required. Existing flood plain affected.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is weak. For the water environment there will be medium to high surface

Benefits	Issues	Sift against Business Case elements: Score and Comments
Safe access to the A40 via the new Western roundabout.		water risk which could lead to flooding. Fluvial compensation areas may be required and has been assessed at a high level. Potential objection from the Developer to share access to the A40. Permanent land take required. The financial case score is very weak. This option requires additional land take from the development south of the A40, hence increased cost for additional land. Maintenance cost required for the new access track. The SGN intermediate pressure gas mains will be affected. The management case score is very weak. This option could have greater impact on preparation and management during construction. Possible objection from stakeholders (landowners, utility companies etc.) due to impacts on utilities and land. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores -5, making it the worst scoring option for the Solar Farm/Field access.

6.13 Whitehouse Farm and Salutation Farm Access

6.13.1 Two options (Sifting Item Nos. **16.2 and 16.3)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.13.2 A trip generation survey has been carried out for the existing accesses. The survey data for the accesses is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

Option 16.2: Access Option B

6.13.3 Sifting Item No. 16.2 provides a new access utilising the existing Barnard Gate road to Salutation Farm. After this it will be a combination of using the existing A40 and new construction to continue the access to Whitehouse Farm.

6.13.4 Figure 6-17 below shows this option. Table 6-24 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

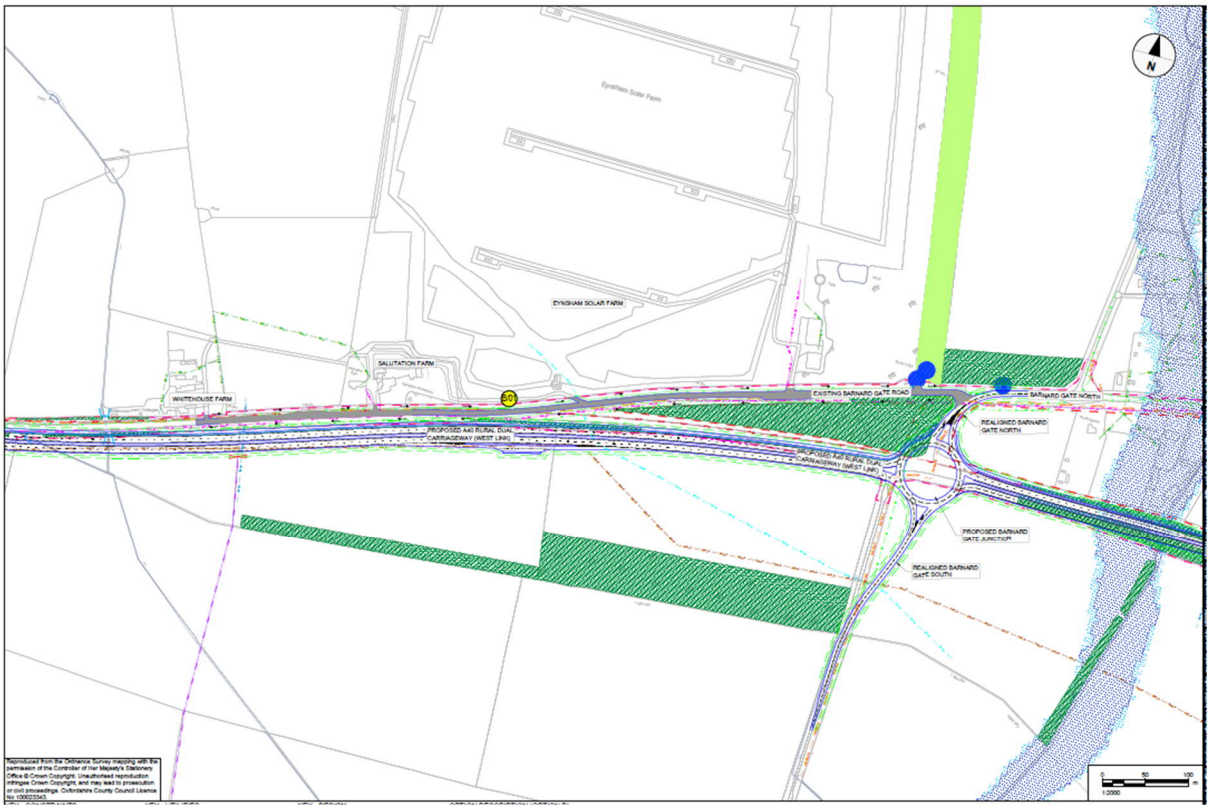


Figure 6-17 Sifting Item No. 16.2 – Access Option B

Table 6-24 Sifting Item No. 16.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
No land take required. Construction can be carried out using conventional traffic management. Reuse of the existing Barnard Gate road and the A40 single carriageway. Positive impact on journey time reliability Safe access to the A40 via the new Barnard Gate roundabout.	Existing utilities are affected. Existing vegetation will be affected.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is very weak. However, this option will have a positive impact on journey time reliability and improve safety for non-motorised users and the owners of Whitehouse Farm and Salutation Farm. The financial case score is very weak as there is an increase in maintenance cost.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		The management case score is very strong as it maintains access to the front and back of the properties with no land take required. This option improves safety for non-motorised users and the owners of Whitehouse Farm and Salutation Farm. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores 2, making it the best performing option for Whitehouse and Salutation Farm Access. Preferred design solution.

Option 16.3: Access Option C

6.13.5 Sifting Item No. 16.3 is utilises the existing Barnard Gate road and private access track providing access to Salutation Farm and Whitehouse Farm.

6.13.6 Figure 6-18 below shows this option. Table 6-25 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

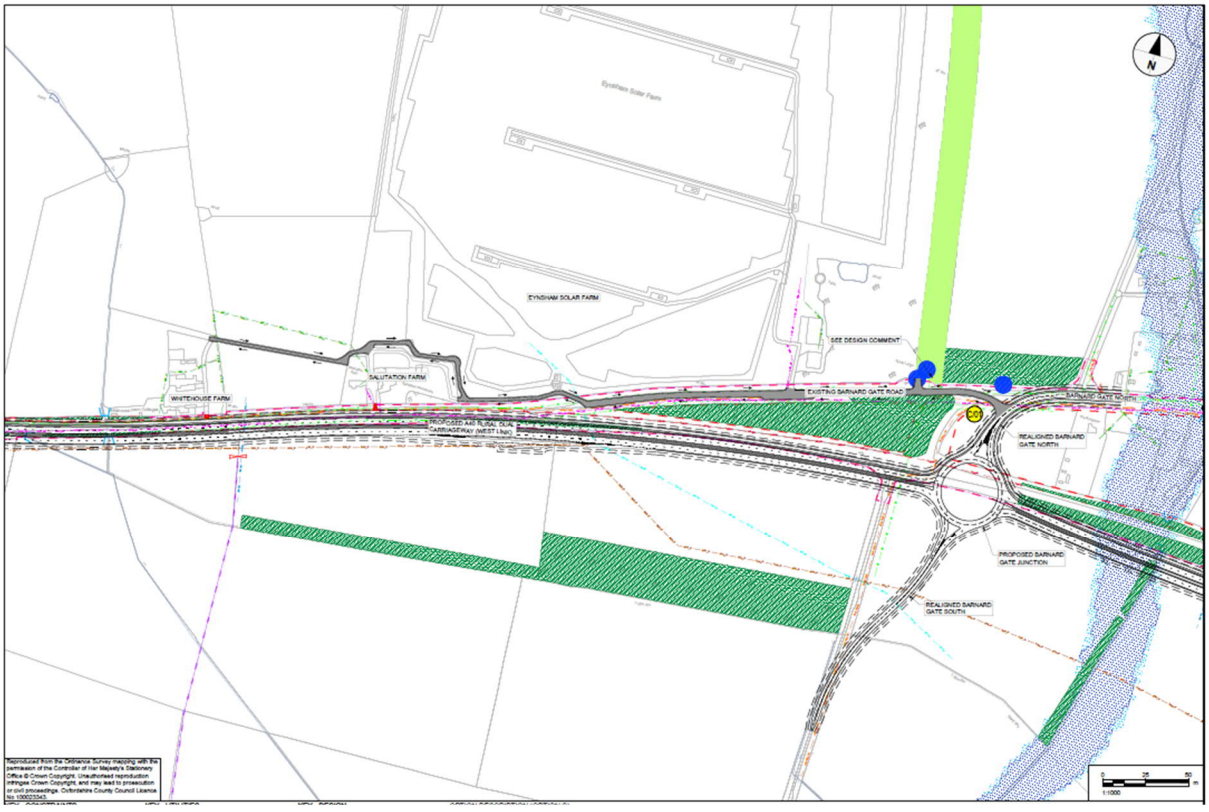


Figure 6-18 Sifting Item No. 16.3 – Access Option C

Table 6-25 Sifting Item No. 16.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Mainly offline construction using appropriate traffic management.	Potential objection from land and property owners. Land take required.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is strong. This option will have a positive impact on journey time reliability and

Benefits	Issues	Sift against Business Case elements: Score and Comments
Existing Barnard Gate road and private access track will be utilised. Safe access to the A40 via the new Barnard Gate roundabout.	Direct access to and from the A40 for Whitehouse Farm and Salutation Farm removed.	improve safety for non-motorised users and the owners of Whitehouse Farm and Salutation Farm. The financial case score is very weak as there is an increase in maintenance cost and additional land take. The management case score is very weak. This option will require additional works and would trigger potential disturbance claims from land and property owners. No access to Whitehouse Farm and Salutation Farm frontages. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores -5, ranking it second compared to the other Whitehouse and Salutation Farm options.

6.14 Chosley Farm Access Options

6.14.1 Two options (Sifting Item Nos. **17.1 and 17.2)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.14.2 A trip generation survey has been carried out for the existing access. The survey data for the access is provided in the Farm Accesses Trip Generation technical note included in Appendix H.

Option 17.1: Chosley Farm Access – Option A

6.14.3 Sifting Item No. 17.1 retains the existing direct access to the A40 eastbound carriageway whilst access to the A40 westbound carriageway will be via the proposed Barnard Gate junction.

6.14.4 Figure 6-19 below shows this option. Table 6-26 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

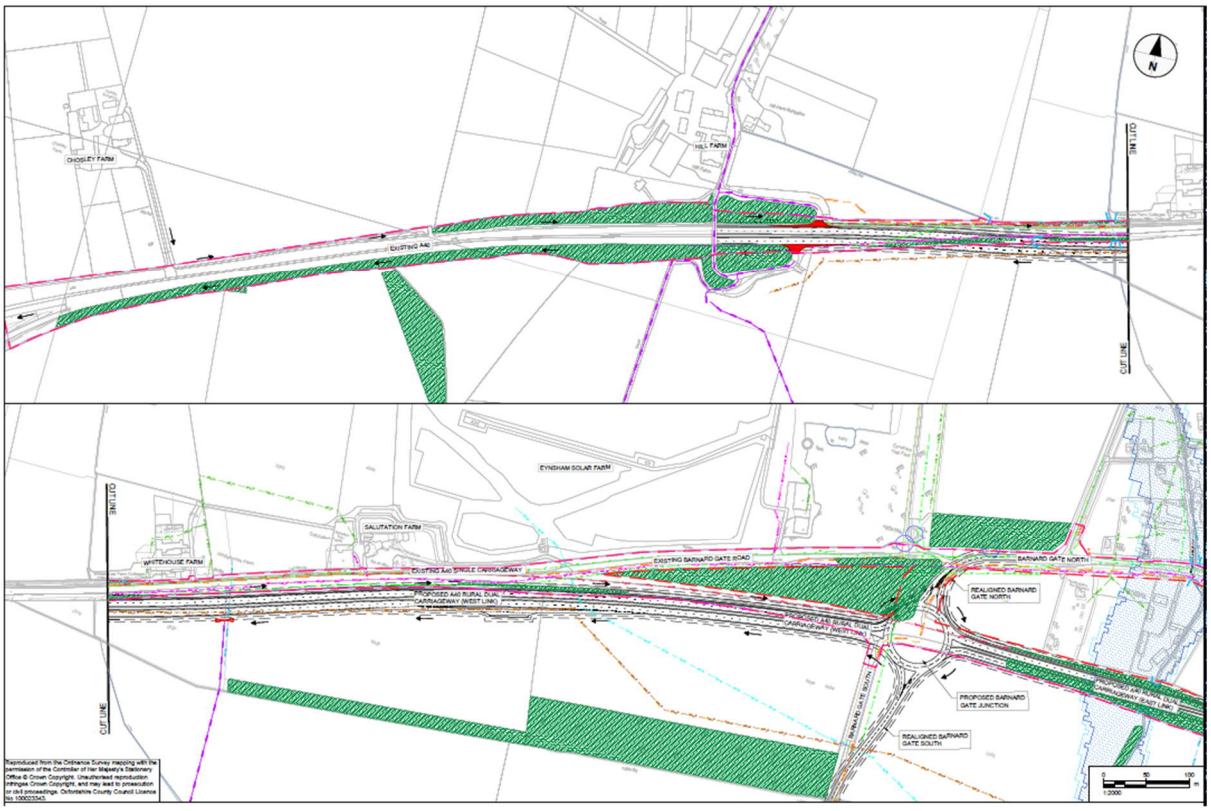


Figure 6-19 Sifting Item No. 17.2 – Option A

Table 6-26 Sifting Item No. 17.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
No land take required.	Journey times to the A40 westbound will be longer, due to the need to make a U-turn at Barnard Gate roundabout to access the westbound carriageway.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a very strong economic case score due to no construction cost and no impact on the existing utilities. The financial case has a neutral score as there is no change in cost as this maintains the existing layout and no impact on existing utilities. The management case has a very strong score due to no costs associated with construction and utilities diversion.

Benefits	Issues	Sift against Business Case elements: Score and Comments
		Neutral commercial case score, as this option remains unchanged as the existing access is maintained. This option scores 6, making it the best performing option for Chosley Farm Access. Preferred design solution.

Option 17.2: Chosley Farm Access – Option B

6.14.5 Sifting Item No. 17.2 involves closure of the existing direct access onto the A40 eastbound carriageway. A new track running parallel to the A40 eastbound carriageway providing access to the A40 at the proposed Barnard Gate junction using a combination of new tracks, the existing Barnard Gate road and the repurposed A40 single carriageway.

6.14.6 Figure 6-20 below shows this option. Table 6-27 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

Figure 6-20 Sifting Item No. 17.2 – Option B

Table 6-27 Sifting Item No. 17.2

Benefits	Issues	Sift against Business Case elements: Score and Comments
Construction can be carried out using conventional traffic management. Safe access to the A40 via the new Barnard Gate roundabout.	Existing utilities are affected. Land take required. Existing vegetation will be affected.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. This option has a neutral economic case score due to construction cost for a new access and stopping up of the existing direct access onto the A40. Land take required.

Benefits	Issues	Sift against Business Case elements: Score and Comments
	Journey times to the A40 will be longer, due to the need to access the A40 from Barnard Gate roundabout. There may be objections from Eynsham Estate and tenant farmers regarding this option.	The financial case has a very weak score as there is a change in cost to construct the new access and this will also include land take and utilities diversions. This will require additional maintenance. The management case has a very weak score as there is a change in cost to construct the new access and this will also include land take and utilities diversions. This will require additional maintenance. Potential objections from landowners. Neutral commercial case score, as this option has a neutral impact on committed development schemes in the corridor. This option scores -4, ranking second compared to the other Chosley Farm Access.

6.15 Lay-by Strategy Options

6.15.1 Two options (Sifting Item Nos. **18.1 and 18.3)** are summarised in this section, with information provided on their scoring, detailed assessments and as to whether the option is recommended to be taken forward for further consideration.

6.15.2 From an assessment undertaken, the lay-by facilities impacted by the scheme are heavily utilised and will need to be replaced. The options below look at the possible locations.

Option 18.1: Lay-by Strategy Option 1

6.15.3 Sifting Item No. 18.1 involves no provision of new lay-by facilities along the A40 Dualling section, alternatively exploring off-site provision.

6.15.4 Figure 6-21 below shows this option. Table 6-28 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

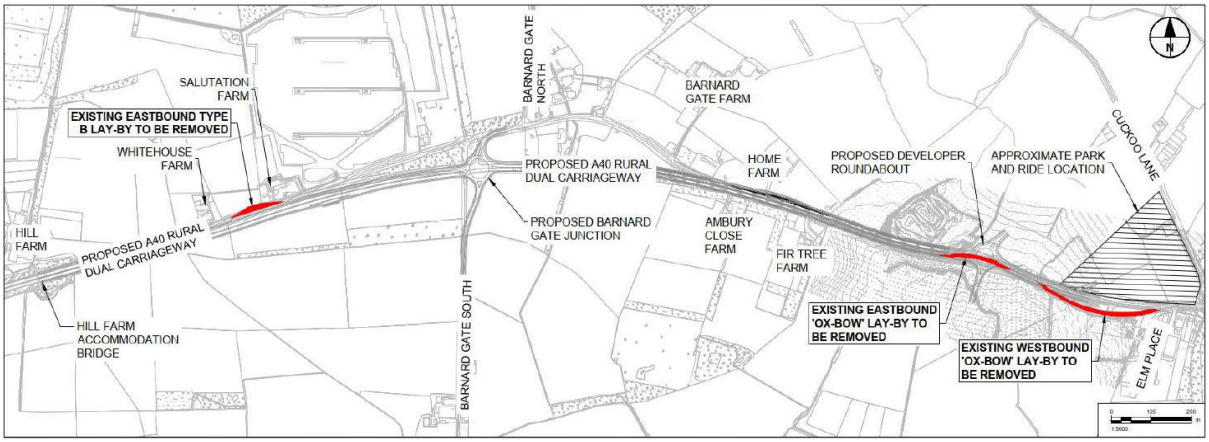


Figure 6-21 Sifting Item No. 18.1 – Lay-by Strategy Option 1

Table 6-28 Sifting Item No. 18.1

Benefits	Issues	Sift against Business Case elements: Score and Comments
	No online lay-by parking is provided.	Neutral strategic case score as this option has a neutral impact on the scheme objectives. The economic case score is weak. This option does not provide online parking facilities; however, it will provide offsite parking facility. The financial case score is very weak as it requires an offsite parking provision. The management case score is very weak as this option requires land take for the offsite facility. The commercial case has a strong score as it meets funding criteria and will support committed schemes in the corridor. This option scores -3, ranking second compared to the Option 3 lay-by strategy.

Option 18.3: Lay-by Strategy Option 3

6.15.5 Sifting Item No. 18.3 proposes Type A lay-bys on the A40 eastbound and westbound carriageways.

6.15.6 Figure 6-22 below shows this option. Table 6-29 outlines potential benefits, issues and EAST assessment scores (against the other option of this junction).

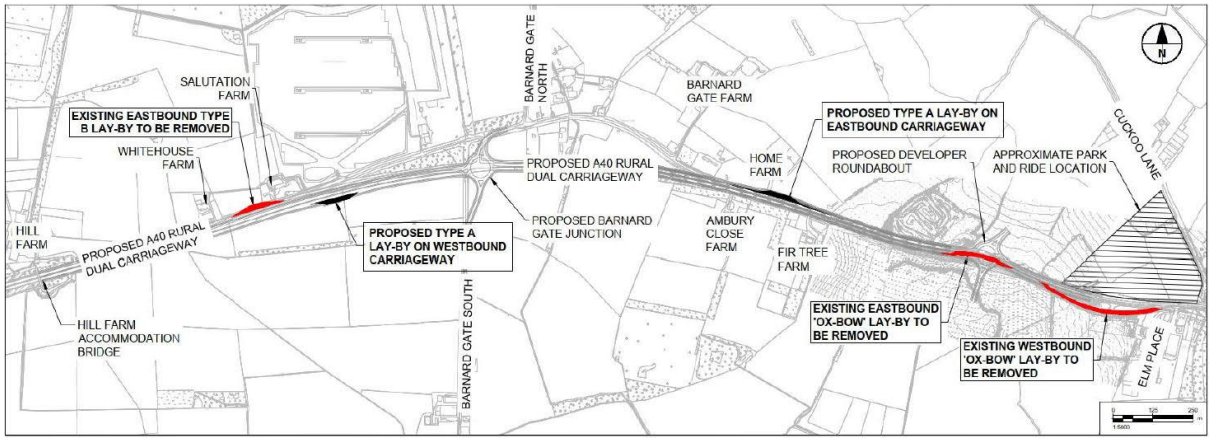


Figure 6-22 Sifting Item No. 18.3 – Lay-by Strategy Option 3

Table 6-29 Sifting Item No. 18.3

Benefits	Issues	Sift against Business Case elements: Score and Comments
Proposed Type A lay-by to be provided on both eastbound and westbound carriageways.	Potential objections from landowners. Land take required. Utility diversions.	The strategic case score is very strong as the option meets some of the scheme objectives. This provides online parking facilities for road users and encourages safer travel. The economic case score is neutral as it has neutral impact on the economic case categories (environmental, economy and social). The financial case score is very weak as this option will require land take, utility diversion and maintenance of the asset. The management case score is very weak. Potential objection from landowners due to proximity of lay-bys to surrounding properties. This option will also require land take and utility diversion. The commercial case score is very good as it meets funding criteria and will support committed schemes in the corridor. This option scores 3, and is therefore the best performing option for the lay-by Strategy. Preferred design solution.

6.16 Weighting

6.16.1 The scoring undertaken in the Stage 2 (for each option) was against a list of criteria (grouped within the five business cases; see Section 6.1 for details). The maximum score an option can get under each case of the five business cases varied (mentioned as 'base case' in Table 6-30). Due to this imbalance in the maximum score possible for each of the five business cases, the overall results (EAST score of each option) can be reasoned as leaning towards the strategic, economic and management cases. Therefore, it was decided that three further weighting scenarios would be tested in order to understand the impact of the weighting on the results and the subsequent ranking of the options (Table 6-30) gives an overview of the weighting assigned in each scenario).

- The first scenario tested was equal weighting, where each business case was assigned a 20% weight.
- The second scenario tested was following OCC's LGF Weighting (see Table 5-1).
- The third scenario tested was limiting the scoring to high-level objectives (reduced the strategic case maximum score from 36 to 26) which were found to be similar to some of the other business case criteria.

Table 6-30 Weighting Scenarios

Scenario	Strategic Case	Economic Case	Financial Case	Management Case	Commercial Case	Total
Base case	36	64	4	40	16	160
Scenario 1: Equal Weighting	20	20	20	20	20	**100**
Scenario 2: OCC LGF Weighting	45	35	10	5	5	**100**
Scenario 3: Limiting Objectives to High-Level	26	64	4	40	16	**150**

6.16.2 Table 6-31 shows the results (highest scored option for a junction) of this weighting process. This shows that for the majority of junctions, the highest scoring option in the three additional weighting scenarios is identical to the highest scoring option in the base case. As noted above, for the dualling options the alignment sections have been compared rather than the Road Alignment Options, and this is reflected in the table below.

6.16.3 There are only two instances where the highest scoring option is not uniform across the weighting process. One of these is from the OCC LGF Weighting Scenario and one is from Limiting Objectives to a High-Level. For the A40 Rural Dual Carriageway Alignment East Link, Scenario 3: Limiting Objectives to a High-Level leads to Option 4.2 being the highest scoring option, over Option 8.2 which is identified in all other weighting scenarios. For the Home Farm Access, the OCC LGF weighting scenario leads to two options gaining the joint-highest score. However, in this instance, one of the joint-highest scoring options is consistent with the other three weighting scenarios.

Table 6-31 Weighting Scenarios Result

#	Location	Highest Scoring Option				Comment
		Base	Scenario 1: Equal Weighting	Scenario 2: OCC LGF Weighting	Scenario 3: Limiting Objectives to High-Level	
-	A40 Rural Dual Carriageway Alignment West Link	1.1	1.1	1.1	1.1	All Scenarios and Base - have same highest score option
-	A40 Rural Dual Carriageway Alignment East Link	8.2	8.2	8.2	4.2	Except Scenarios 3, all others have same highest score option
-	Extent of Eynsham Dual Carriageway Alignment Eynsham West Road	8.3	8.3	8.3	8.3	All Scenarios and Base - have same highest score option

9	Barnard Gate Junction	Roundabout Option 2	Roundabout Option 2	Roundabout Option 2	Roundabout Option 2	All Scenarios and Base - have same highest score option
10	Eynsham West Junction	Roundabout (3-arm) - Applies to Dual Option 8	Roundabout (3-arm) - Applies to Dual Option 8	Roundabout (3-arm) - Applies to Dual Option 8	Roundabout (3-arm) - Applies to Dual Option 8	All Scenarios and Base - have same highest score option
11	Ambury Close Farm and Fir Tree Farm Access	Option C	Option C	Option C	Option C	All Scenarios and Base - have same highest score option
12	Barnard Gate Farm Access	Option A	Option A	Option A	Option A	All Scenarios and Base - have same highest score option
13	Hill Farm Access	Option C	Option C	Option C	Option C	All Scenarios and Base - have same highest score option
14	Home Farm Access	Option A	Option A	Option A & Option B	Option A	Except Scenarios 2, all others have same highest score option
15	Solar Farm/ Field Access Options	Option A	Option A	Option A	Option A	All Scenarios and Base - have same highest score option
16	Whitehouse Farm and Salutation Farm Access	Option B	Option B	Option B	Option B	All Scenarios and Base - have same highest score option
17	Chosley Farm Access Options	Option A	Option A	Option A	Option A	All Scenarios and Base - have same highest score option
18	Lay-by Strategy Options	Option 3	Option 3	Option 3	Option 3	All Scenarios and Base - have same highest score option

6.17 Next Steps

6.17.1 The preferred options to deliver the A40 Dualling scheme will be selected through the optioneering process discussed in this report. These options will then be taken forward for further assessment and design to understand the feasibility of the schemes in greater detail (Feasibility Design; Preliminary Design including geotechnical ground surveys; Detailed Design). However, at present, discussions are ongoing with OCC as to determine the preferred option for each alignment, junction and access. This OAR will be updated accordingly once this has been confirmed.

6.17.2 It is to be noted that this is an iterative process. Further corrections to the scoring (Stage 2) can take place in line with feedback from relevant stakeholders, OCC and new/revised evidence. Some the options might prove beneficial if packaged together. Further baseline surveys (ecological, noise, air quality, traffic, topographical etc.) may need be undertaken to inform further option design work, traffic modelling and impact appraisals that are required to inform the next stage of option assessment.

6.17.3 The VISSIM model used in the option assessment is an interim, which are suitable for comparing the relative performance of each option in the absence of an updated model. The performance of the preferred option is intended to be tested in an extended/ updated 2020 VISSIM base model, which is being developed by AECOM in parallel with the option testing.

6.17.4 A logic map should be developed for the preferred options to set out the short to medium term outcomes and longer term impacts.

6.17.5 A high-level ASR to set out the methodology and how further appraisal will be undertaken including potential scenarios and sensitivity tests. The ASR will detail the proposed approach to modelling and forecasting, the proposed level of design or specification which will inform the cost estimation and other details.

6.17.6 The list of risks and mitigation measures will be updated to include risks on modelling, design, land take, cost estimates, COVID-19 on travel patterns/ demand, and other key components.

6.17.7 Finally, as the study progresses, design and refinement of the preferred option(s)/ sub-options(s) to be undertaken; but as evidence, for example from updated modelling, becomes available, it may be necessary to revisit the optioneering. Options sifted out at this stage may still have a strong case for more specific needs (e.g. related to particular development sites and / or following delivery of other interventions, as part of an overarching packaged approach, funds permitting).

7 Modifications to Preferred Route

7.1 Introduction

7.1.1 Following consultation with stakeholders by OCC, modifications have been requested to various elements of the preferred option design previously discussed in Section 6. These changes are as follows and have been incorporated into the general arrangement drawings:

- Hill Farm Access Option C; the proposed access track widened to allow two-way traffic.
- Home Farm Access Option A; the proposed access track realigned to minimise land take from Barnard Gate Farm.
- A40 Rural Dual Carriageway Alignment East Link – Option 8; the proposed dual link realigned between Home Farm and the future proposed development driven Eynsham West junction. This was undertaken to enable moving of the proposed eastbound Type A lay-by further east.
- The A40 Eastbound Type A Lay-by – Lay-by Strategy Option 3; the proposed eastbound lay-by moved further east to address the impacts on 3 neighbouring properties namely Barnard Gate Farm, Home Farm and Ambury Close Farm.
- Ambury Close Farm and Fir Tree Farm Access Option C; the proposed access track widened to allow two-way traffic between the realigned Barnard Gate South road and Ambury Close Farm access. The access track was realigned northwards to minimise land take.

8 Development Driven Considerations

8.1 Introduction

8.1.1 Following the AECOM design of a three-arm roundabout to future proof access to Oxfordshire Cotswolds Garden Village (OCGV), OCC have instructed AECOM to carry out further assessment for the following:

- Scenario A – a four-arm roundabout with a north arm access to OCGV and a south arm access to West Eynsham SDA.
- Scenario B – a four-arm roundabout with two north arm accesses, to OCGV and a commercial facility.
- Scenario C – a five-arm roundabout with two north arm accesses (OCGV and a commercial facility) and a south arm access to West Eynsham SDA.

8.1.2 The details of the assessment are described in the Future Proposed Development Driven Eynsham West Roundabout Assessment technical note, included in Appendix I.

9 Risks and Assumptions

9.1 Introduction

9.1.1 Risks will continue to be managed in accordance with recognised guidance from HM Treasury's Green Book on Appraisal and Evaluation in Central Government, the Office of Government Commerce (OGC), and DfT's TAG and Procedures for Dealing with Optimism Bias in Transport Planning.

9.1.2 A risk register has been produced for the scheme, which will remain a live document. There are expected to be risks around scheme delivery and costs, planning and modelling assumptions, limitations, caveats and exclusions at this early stage of assessment.

9.1.3 Key risks related to current work are discussed in Table 9-1. This is an initial draft for comment, and will need to be reviewed and approved by both AECOM and OCC.

Table 9-1: Risk Assessment

#	Description of risk and context	Effect	Mitigation
1	Lack of agreement on the scheme objectives, scope and programme.	The study is delayed, there is abortive work or effort is focused in the wrong areas.	Confirm during various stages of the project and in regular meetings. This will be part of the OAR/ ASR reports.
2	Objectives and sifting criteria not aligned with local and national priorities, guidance, funding/ financing opportunities, uncertainty due to Covid-19 and are based on local pressure, perceptions or desired scheme(s).	Scheme has a non-compliant case, may lack strong political support and rejected for funding/ planning permission.	By following the TAG process, we will address, manage and mitigate this risk. Bespoke sifting criteria reflecting the scheme and location context will be developed. In the current political and economic climate, it is imperative that we demonstrate how the scheme aligns to and fulfils Government objectives and priorities. We will regularly review government policies and update our method/approach accordingly, such as including the DfT's Cycling and Walking Plan for England (2020) design recommendations and revised TAG guidance which account the Covid-19 impact.
3	Major gaps in the optioneering work and sifting is inconsistent or poorly documented.	The process appears non-transparent and the study is open to challenge.	AECOM has nominated an experienced team with expertise in delivering or reviewing multi-criteria appraisal and direct experience in recent relevant projects and undertaken critical reviews of major scheme. The TAG process will be followed, and assessment will be well-documented, this will be done in regular consultation with OCC.
4	Insufficient information to populate all aspects of the sifting criteria, review, update and follow the TAG process.	There is potential for subjectivity in assessment.	Early engagement and ongoing workshops will help ensure there is early sight of our approach to sifting. We are also reliant on inputs from others e.g. the design, modelling, environment and others – we will provide support to them if needed or help review to speed things along. OAR/ ASR will document the adopted method/ approach and available data. Develop scenarios to account for uncertainties, such as scenarios around weighting business case elements scoring.
5	Modelling evidence/ results are inconsistent or stronger for some options than for others and raises concern among stakeholders e.g. basis of trip patterns underpinning the modelling. Modelling do not include/ address the impact of Covid-19 on future travel pattern.	Acceptability of scheme is questioned.	We will share model results and raise any concerns on the results/ plausibility. This will not in itself address any underlying issues with the model(s), should any stakeholders object based on the technical modelling approach against TAG criteria and best practice. We can define sensitivity tests/ stress tests (including recent OBR revision on future growth) that will help build confidence on how the scheme responds and help alleviate concerns on the models or results.
6	Lack of focus on active travel as compared to motorised travel. Increase in active travel trips during the Covid-19 is not considered.	Relevance and acceptability of scheme is questioned.	We will document the active travel pattern in the study area by using Census data, local policies and also include propensity to cycle tool to show high cycling use scenarios. Optioneering work will include criteria on active travel and the DfT's Cycling and Walking Plan for England (2020) design recommendations will be used as part of the assessment.
7	Assessment of problems/ challenges and results from the modelling show poor case; or construction impacts are significant in economic terms or stakeholder acceptance terms.	Relevance and acceptability of scheme is questioned.	Keep up to date of early indications. Use workshop to go through likely outputs and identify where to expect potential challenges in explanation / difficult outputs to explain. Develop thorough but accessible evidence base. We can map the modelling outputs against relevant key performance indicators, local priorities and challenges.

#	Description of risk and context	Effect	Mitigation
8	Lack of engagement with key people in OCC, consultants, local councils, stakeholders and public/ local resident groups.	Relevant people are not engaged early enough to contribute relevant and valuable inputs and insights, lessons learned etc.	Continuously review programme and assess engagement requirements. Review the work in line with key stakeholder concerns such as land take, active travel infrastructure, safety, environment and others.
9	There are too many options/ sub-options being modelled and assessed in the timescales.	Timescales are impacted, it is difficult to review and understand the differences between options, and the scheme becomes disjointed and lacks focus.	Discuss with OCC, reviewing the results and the best ways of categorising the options / sub-options. Consider use of annexes to contain more detailed information. Adopt a robust approach that will be clearly defined in ASR/OAR.
10	Modelling approach and area covered by model challenged by stakeholders or in scrutiny; change of scope and approach will impact the timescale and cost of the study.	Relevance and acceptability of scheme is questioned.	Review existing information and model results if available on travel patterns; seek early view from OCC and if possible key stakeholders.
11	Existing models found to be of poor quality and not suitable for use - potential issues with consistency with other OCC work using these models. Impact on programme if significant work required to update.	Relevance and acceptability of scheme is questioned.	Models reviewed and found to be of reasonable quality and issues are being monitored so risk of inconsistency is lower. Adopt a robust approach (and follow the TAG guidance) that will be clearly defined in ASR/OAR.
12	Latest OSM runs agreed to use for demand forecasts may not be based on latest design, so mismatch between capacity in OSM and microsimulation.	The study is delayed, there is abortive work or effort is focused in the wrong areas	Assess difference between design used in OSM runs and the latest designs after optioneering process. Consider rerunning OSM and extracting updated demand forecasts, if differences are considered to be significant enough.
13	There are issues with collected survey data which result in local junction modelling or microsimulation calibration/ validation issues, delaying programme.	Relevance and acceptability of scheme is questioned.	Review and check data as early as possible to identify any issues in a timely manner. Regular updates between AECOM/ OCC to highlight any issues with calibration/ validation as soon as possible.
14	Local junction modelling or microsimulation modelling identifies design requirements that cannot be achieved within budget/ programme of project such as due to land take.	Relevance and acceptability of scheme is questioned.	Regular communication with OCC and designers to ensure a deliverable solution is achieved. Early testing of options in microsimulation to enable a solution to be found.
15	Demand predicted by OSM for local junction modelling and microsimulation, results in over saturation of microsimulation network, due to inconsistencies or differences between tools.	Relevance and acceptability of scheme is questioned.	Early investigation of OSM and likely demand predictions - to identify if some iteration required between VISSIM/ OSM to improve consistency and produce sensible forecasts. OCC to consider additional OSM runs if deemed necessary.
16	Over focus/estimation of public transport usage as compared to the recent/future change in public transport usage pattern due to the Covid-19 is not considered.	Study results are questioned. Relevance and acceptability of scheme is questioned.	We will document the public transport pattern in the study area by using Census data, local policies, recent trends and proposed public transport improvements. We can define sensitivity tests to account for uncertainty in public transport usage and comment on the impact of Covid-19 on public transport usage (such as in terms of timescale).
17	Lack of detail on proposed developments. Uncertainty on proposed development – delivery year/ location/ details.	Unable to model accurately, model outputs are unreliable, there is abortive work and relevance of the scheme is questioned.	Regular updates between AECOM/ OCC to highlight any issues with calibration/ validation as soon as possible.
18	Land acquisition required where initially not envisaged	This could have a negative effect on the CPO process, causing issues or delays in the programme.	ECI input on constructability required to make sure enough land is covered within the Red Line Boundary.
19	Diversion of utilities due to proposed design	Increase in total cost and programme of the scheme	C2 information has been gathered to obtain an overview of the approximate location of utilities. C3 information will be requested during the next design stage.

#	Description of risk and context	Effect	Mitigation
20	Objection on the scheme from Natural England if there are negative impacts to the SSSI/SAC	Acceptability of scheme is questioned.	Engage Natural England by having early discussions of the proposals and any mitigation measures that would be required.
21	Objections from other important stakeholder (e.g. Environment Agency etc)	Acceptability of scheme is questioned.	Engage with stakeholders by having early discussions of the proposals and any mitigation measures that would be required.

9.2 Assumptions

9.2.1 This section provides an overview of the key assumptions. This includes modelling, design and highways assumptions.

Modelling Assumptions

9.2.2 The modelling assumptions and limitations for the operational assessment undertaken in LinSig have been summarised below:

- Based on the existing and forecasted flows in the North and South approaches, it is predicted that the side roads will not require a green stage in every cycle.
- In order to model the demand dependency for pedestrians and side roads, two scenarios have been modelled, a Worst Case Scenario with full demand and 120s cycle time, and an Additional Scenario with 50% of activations of demand dependent stages, which has been coded with 240s cycle time (equivalent to one activation every two cycles – 50%).
- Pedestrian clearance times have been assumed to extend to its maximum length as a worst-case scenario.
- LinSig v3.2.40.0 has been used to model Barnard Gate junction.
- The junction has been reviewed in isolation with impacts of any upstream and downstream junctions not being considered. As such LinSig works on the basis that traffic can flow freely away from the junction. LinSig cannot model 'suppressed' demand on the network, only the levels of traffic that can pass through the junction.

9.2.3 The modelling assumptions and limitations for the operational assessment undertaken in VISSIM have been summarised below:

- The 2031 VISSIM Forecast models were developed based on the validated 2020 Base VISSIM model developed by AECOM.
- The VISSIM forecast demand has been developed based on the latest outputs from the 2031 A40 Corridor Model provided by Pell Frischmann. The demand assumptions and different scenarios were agreed with OCC.
- The trip generation for the Garden Village and West Eynsham developments was coded in line with the demand calculations developed by Wood Consultants for the previous 2031 VISSIM Model.
- The schemes included in the Stage 1 VISSIM forecast model were agreed with OCC and modelled in line with the latest design available at the time.
- The Stage 1 Forecast VISSIM model will require further optimization of the signal operation and design updates once the required details are available.
- The 2031 demand for pedestrian/ cyclists at each junction was provided by OCC.
- The bus services coded in the 2031 models were coded consistently with the information included in the previous VISSIM models developed by Wood.
- The junction has been reviewed in isolation with impacts of the operation of any upstream and downstream junctions not being considered.

Design and Highways Assumptions

9.2.4 The design and highways assumptions for the options defined above are as follows:

- NMU shared use facility widths have been designed as per OCCs “A40 Corridor Witney to Oxford North Future Walking and Cycling Provision” document.
- It is assumed that the Topographical surveys are accurate.
- It is assumed that C2 drawings are accurate – C3 information will be requested where necessary.
- The Design Manual for Roads and Bridges (DMRB) has been used as the main highways standard document.
- DfT’s TAG TAP requirements have been followed during the Optioneering/Feasibility stage.
- Pedestrian and cycle flows provided by OCC have been used to carry out traffic modelling in VISSIM.

Appendix A List of Referred Documents

Document name	Last updated	Project	Author
A40 Strategy - Consultation	2019	A40 Strategy	OCC
A40 Option Assessment Report	2017	A40 Smart Corridor	OCC
HIF2 Economic Appraisal Report	2019	A40 Smart Corridor	Steer
HIF2 Business Case Submission	2019	A40 Smart Corridor	OCC
A40 Smart Corridor - Feasibility Design	2019	A40 Smart Corridor	AECOM
Eynsham P&R modelling report	2019	A40 Science Transit 2 – Business Case	OCC
A40 Option Assessment Report	2017	A40 Science Transit 2 – Business Case	OCC
DfT Outline Business Case Submission	2019	A40 Science Transit 2 – Business Case	OCC
VISSIM Base Model Local Validation Report	2019	OCGV Eynsham AAP and West Eynsham SPD – Supporting Transport Study	Wood
VISSIM 2031 Forecast Year Report	Still being finalised	OCGV Eynsham AAP and West Eynsham SPD – Supporting Transport Study	Wood
Cotswolds Garden Village AAP & West Eynsham SPD: Developing the Transport Evidence Base	2019	OCGV Eynsham AAP and West Eynsham SPD – Supporting Transport Study	Wood
Oxfordshire Housing and Growth Deal	2017	Oxfordshire Housing and Growth Deal	Oxfordshire Growth Board
Draft Access to Witney – TAG Report	2020	Access to Witney	OCC
Oxfordshire Infrastructure Strategy (OXIS)	2017	Oxfordshire Infrastructure Strategy (OXIS)	Oxfordshire Growth Board
Connecting Oxfordshire Local Transport Plan 4 (LTP4)	2016	Connecting Oxfordshire Local Transport Plan 4 (LTP4)	OCC
Oxford Transport Strategy	2016	Oxford Transport Strategy	OCC
West Oxfordshire Local Plan 2031	2018	West Oxfordshire Local Plan 2031	West Oxfordshire District Council
Oxford Local Plan 2036	2019	Oxford Local Plan 2036	Oxford City Council
A40 Park and Ride and Bus Lane Scheme – Transport Assessment	2019	A40 Smart Corridor	AECOM
A40 Corridor – Witney to Oxford North Future Walking and Cycling Provision	2020	A40 Corridor	TBC
National Planning Policy Framework	2019	National Planning Policy Framework	Ministry of Housing, Communities and Local Government
Highways England Delivery Plan	2015	Delivery Plan	Highways England
Industrial Strategy White Paper	2017	Building a Britain fit for the future	HM Government
Housing White Paper	2017	Fixing our broken housing market	Ministry of Housing, Communities and Local Government
Transport Investment Strategy	2017	Transport Investment Strategy	Department for Transport
Strategic Economic Plan Oxfordshire	2016	Strategic Economic Plan	OxLEP
Bus and Rapid Transit Strategy	2016	Bus and Rapid Transit Strategy	OCC
Oxfordshire Cotswolds Garden Village AAP, Transport Strategy	2020	OCGV	OCC
Garden Village Oxfordshire, Transport Assessment	2020	OGV	Stantec
West Eynsham, Strategic Development Area	2018	West Eynsham	West Oxfordshire District Council
Salt Cross Garden Village AAP	2020	Salt Cross Garden Village	West Oxfordshire District Council

Appendix B Alignment of Policy Documents and the Scheme

Alignment between identified policies and the A40 Dualling Scheme

Policy Document	Alignment
National Policy Planning Framework	Moderate
Major Road Network	Strong
Industrial Strategy White Paper	Strong
Transport Investment Strategy	Strong
Gear Change: A bold vision for cycling and walking report	Moderate
A Better Deal for Bus Users	Strong
Housing White Paper – Fixing Our Broken Housing Market	Moderate
Strategic Economic Plan for Oxfordshire 2016	Moderate
Oxfordshire Local Industrial Strategy	Moderate
Oxfordshire Investment Plan	Strong
Oxfordshire's Housing and Growth Deal	Moderate
Connecting Oxfordshire: Local Transport Plan 2015-2031	Strong
Oxfordshire Infrastructure Strategy	Strong
West Oxfordshire Adopted Local Plan (2011-2031)	Strong
Oxford Transport Strategy	Moderate
Bus and Rapid Transit Strategy	Strong
Active and Healthy Travel Strategy	Moderate
A40 Corridor Strategy	Strong
Oxford Park and Ride Strategy	Strong
Oxfordshire Cotswolds (Salt Cross) Garden Village Area Action Plan	Strong
Salt Cross Garden Village Transport Strategy	Strong
Eynsham Neighbourhood Plan	Strong

Appendix C Eynsham Park and Ride

As part of the A40 Strategy, the need for a new Park and Ride scheme along the A40 was highlighted. This led to a site in Eynsham being identified as a future Park and Ride site, as part of Phase 1 of the A40 Corridor Strategy.

The Eynsham Park and Ride site was included as part of the A40 Science Transit 2 scheme. The scheme includes:

- An 850 car parking space Park & Ride, with additional cycle parking and motorcycle parking;
- A segregated eastbound bus lane between the proposed Park & Ride and Duke's Cut, with intermittent gaps on junction approaches;
- A westbound bus lane starting a short distance west of the A40/Horsemere Lane junction and ending approximately 150m before the A40/Eynsham Road signalised junction;
- A westbound bus lane starting approximately 300m west of the A40/Cassington Road signalised junction continuing for approximately 550m;
- Shared footway/cycleway on the northern side of the A40 with links into the Park & Ride site;
- A new roundabout on the A40 to provide access to the Park & Ride; and
- A new entry only access to the Park & Ride from Cuckoo Lane.

Two access junctions are provided for the Park and Ride: the primary access junction is a roundabout with the A40, west of Cuckoo Lane, the secondary access is from Cuckoo Lane and is a priority T-junction. As part of the scheme the existing bus stops along the bus lane route will be improved and re-located and a new pair of bus stops will be provided.

The proposed Park and Ride will be located to the north of the A40 west of Cuckoo Lane, to the north-west of Eynsham. Figure 9-1 shows the location of the scheme.

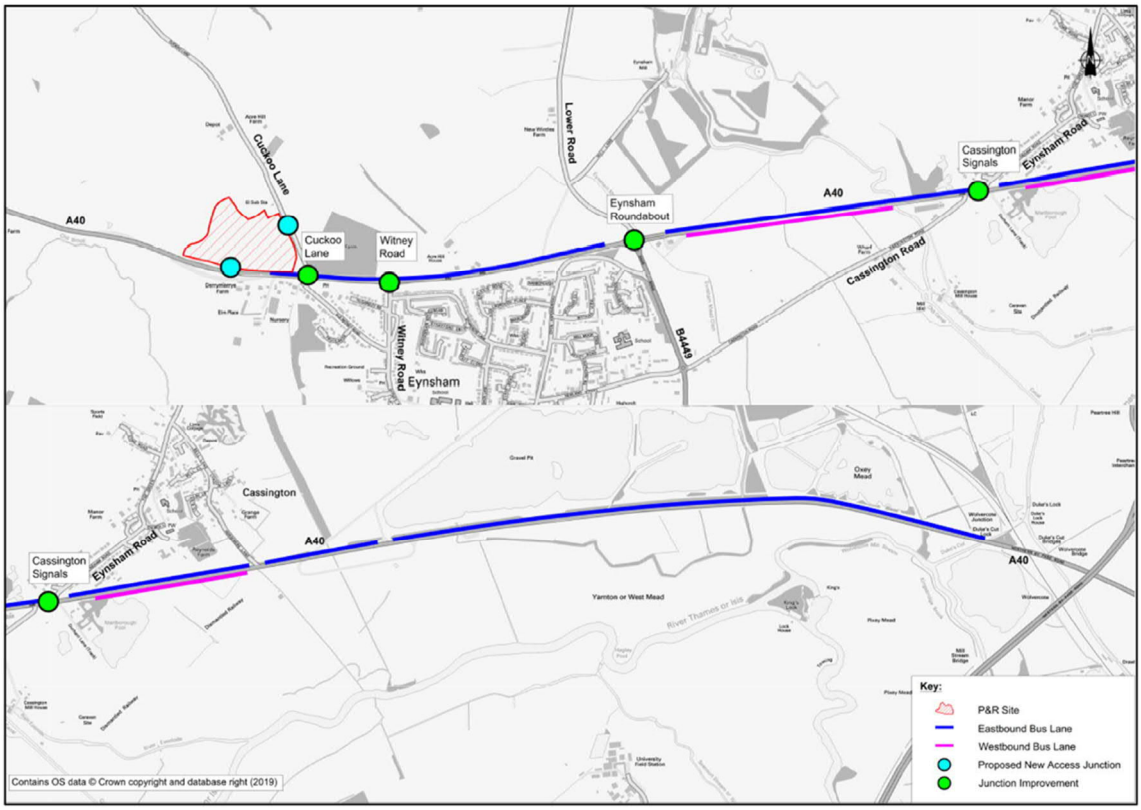


Figure 9-1 Park and Ride Site Boundary and Associated Schemes

Source: A40 Park & Ride and Bus Lane Scheme Transport Assessment, AECOM (May 2019)

The aim of the scheme is to improve the reliability, frequency and variety of destination in Oxford served by public transport, thereby encouraging a reduction in car travel into Oxford and to do so while avoiding significant adverse impacts on general traffic along the A40 corridor. The scheme also delivers improvements for people using non-motorised transport along and across the A40.

Further information on the Eynsham Park and Ride can be found in the A40 Park & Ride and Bus Lane Scheme Transport Assessment (AECOM, 2019).

Appendix D – Initial Long List of Options

Initial Long List of Options

Option No.	Ref	Options	Description
	DN	Do Nothing	Carriageway to remain as existing (no dualling), A40 single carriageway to remain.
	DM	Do Minimum - Design as per 2018 report	Dualling as detailed in previous report. Dual Carriageway with alignment as previously designed, 2.5m centre reservice, roundabout at Barnards Gate, Overbridge Access to properties on south eastern side
1	**Road Alignment 1**	A40 Rural Dual Carriageway West Link - Option 1	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction. There is a proposed lay-by on the westbound carriageway opposite Salutation Farm, and possibility for tree planting or environmental barriers (acoustic fencing) between the proposed dualling and the existing A40 to provide screening for the properties north of the A40.
		A40 Rural Dual Carriageway Alignment East Link - Option 1	This option begins at the proposed Barnard Gate Junction and continues online eastwards towards the proposed Eynsham West roundabout. There is a proposed lay-by on the eastbound carriageway in the vicinity of Home Farm.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 1	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
	Road Alignment 2	A40 Rural Dual Carriageway Alignment West Link - Option 2	This proposed dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm accesses and continues online eastwards until it reaches the proposed Barnard Gate Junction.
2		A40 Rural Dual Carriageway Alignment East Link - Option 2	The dualling continues offline, eastwards and to the south of the existing A40 single carriageway, between Barnard Gate Junction and Barnard Gate Farm, before crossing the A40 and continuing to the north of the existing carriageway towards the proposed Eynsham West Roundabout. There is a proposed lay-by on the eastbound carriageway next to or in the vicinity of Home Farm.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 2	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
3	**Road Alignment 3**	A40 Rural Dual Carriageway Alignment West Link - Option 3	The proposed offline dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east it is south of the existing A40 until it reaches the proposed Barnard Gate Junction on the existing Barnard Gate South Rd to the south of the existing junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 3	From the Proposed Barnard Gate Junction on the existing Barnard Gate South Rd, south of the existing junction, the dualling continues offline eastwards and south of the existing A40 single carriageway, crossing Chill Brook and the flood plain and onwards towards and across Ambury Close and Fir Tree Farms before crossing to the north of the existing A40 carriageway at the Eynsham Motocross site and continuing on towards the Proposed Eynsham West Roundabout. The vertical profile will need to be raised across Chill Brook and associated flood plain in order to avoid flooding. This option will require a substantial amount of land take and will entail the removal of some established vegetation.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 3	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
4	**Road Alignment 4**	A40 Rural Dual Carriageway Alignment West Link - Option 4	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 4	This option begins at the proposed Barnard Gate Junction and continues online eastwards towards the proposed Eynsham East roundabout and will require a 2.5% super elevation with a need for central reserve

			drainage, widened central reserve and verge for visibility through the super elevated section.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 4	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
5	**Road Alignment 5**	A40 Rural Dual Carriageway Alignment West Link - Option 5	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 5	The dualling continues offline, eastwards and to the south of the existing A40 single carriageway, between Barnard Gate Junction and Barnard Gate Farm, before crossing the A40 and continuing to the north of the existing carriageway towards the proposed Eynsham East Roundabout. The dual alignment will require a 3.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 5	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
6	**Road Alignment 6**	A40 Rural Dual Carriageway Alignment West Link - Option 6	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 6	The dualling continues offline, eastwards and to the south of the existing A40 single carriageway, between Barnard Gate Junction and Barnard Gate Farm, before crossing the A40 and continuing to the north of the existing carriageway towards the proposed Eynsham West Roundabout.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 6	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
7	**Road Alignment 7**	A40 Rural Dual Carriageway Alignment West Link - Option 7	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 7	This option begins at the proposed Barnard Gate Junction and continues online eastwards towards the proposed Eynsham East roundabout and will require a 2.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 7	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
8	**Road Alignment 8**	A40 Rural Dual Carriageway Alignment West Link - Option 8	The proposed online dualling of the A40 Smart Corridor between Whitney in the west and Oxford in the east begins at the tie-in to the existing Dual carriageway in the vicinity of Hill Farm overbridge, travelling east, it then moves offline south of the existing A40, before it comes back online in the vicinity of the existing Barnard Gate Junction / proposed Barnard Gate Junction.
		A40 Rural Dual Carriageway Alignment East Link - Option 8	This option begins at the proposed Barnard Gate Junction and continues online eastwards towards the proposed Eynsham West roundabout.
		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 8	From the proposed Eynsham West Roundabout, the dualling continues online, travelling eastwards until it ties in with the Eynsham Park & Ride Junction.
9	**Barnard Gate Junction**	Compact Grade Separated Junction - Option A	The proposed grade separated junction connects the proposed dualling alignments and local roads at Barnard Gate with improved entry and exit tapers on the eastbound and westbound carriageways, and an overbridge of approximately 36m span. The junction geometry will require significant land take and earthworks and provide a footprint of approximately 23492.5m2.
		Signalised Junction - Option B	The proposed signalised junction connects the proposed dualling alignments and local roads and will provide traffic signals to allow for an at-grade crossing at Barnard Gate. The junction footprint is approximately 3587.4m2.

		Roundabout Option 1 - (Option C)	The proposed roundabout option 1 provides connection for the realigned Barnard Gate north and south, and the proposed dualling alignments. The junction footprint approximately 9602.2m2 will impact on grown vegetation area and conservation areas within the proximity of the existing Barnard Gate junction.
		Roundabout Option 2 - (Option C)	The proposed roundabout option 1 provides connection for the realigned Barnard Gate north and south, and the proposed dualling alignments. The junction footprint approximately 8887.6m2 will have no impact on grown vegetation area at Barnard Gate, and minimise impact to conservation areas and surrounding properties
	Eynsham West Junction (Garden Village Development Access)	Roundabout (3-arm) - Applies to Dual Option 2	This proposed 3-Arm Roundabout Option connects the proposed east link from the west and the Options 2 and Eynsham dual carriageway alignment from the east as well as a development road from the north.
10		Roundabout (3-arm) - Applies to Dual Option 3	This proposed 3-Arm Roundabout Option connects the proposed Options 3 - fully offline dual carriageway alignment east link from the west and the Options 3 - Eynsham dual carriageway alignment from the east as well as a development road from the north.
		Roundabout (3-arm) - Applies to Dual Options 4, 5, 6 and 7	This proposed 3-Arm Roundabout Option connects the proposed east link from the west and Eynsham dual carriageway alignment from the east as well as a development road from the north.
		Roundabout (3-arm) - Applies to Dual Option 8	This proposed 3-Arm Roundabout Option connects the proposed east link from the west and the Option 8 Eynsham dual carriageway alignment from the east as well as a development road from the north.
		Roundabout (4-arm) - Applies to Dual Option 1	The proposed 4-Arm Roundabout Option connects the east link from the west and Eynsham dual carriageway alignment from the east as well as development roads from the north and the south.
11	**Ambury Close Farm and Fir Tree Farm Access Options**	Ambury Close Farm & Fir Tree Farm Access - Option A	This option provides direct access to and from the proposed dual A40 for both Ambury Close Farm & Fir Tree Farm.
		Ambury Close Farm & Fir Tree Farm Access - Option B	This option requires access to and from both Ambury Close Farm & Fir Tree Farm to come from Barnard Gate North Rd by the provision a new road and an overbridge.
		Ambury Close Farm & Fir Tree Farm Access -Option C	This option provides a new access to both Ambury Close Farm & Fir Tree Farm by the provision of a new access track with passing bays which comes off the re-aligned Barnard Gate South Rd, south of the roundabout, and runs parallel to, and south of, the eastbound carriageway to Fir Tree Farm.
		Ambury Close Farm & Fir Tree Farm Access - Option D	This option provides a new access to both Ambury Close Farm & Fir Tree Farm by the provision of a new access track with passing bays running east and parallel to the proposed A40 westbound dual carriageway and forming a south arm for the proposed Eynsham West Roundabout.
12	**Barnard Gate Farm Access Options**	Barnard Gate Farm Access - Option A	This option maintains the existing access to Barnard Gate Farm.
		Barnard Gate Farm Access - Option B	This option provides a new access to and from Barnard Gate Farm which connects the existing Barnard Gate North Rd through to the proposed Barnard Gate Junction.
13	**Hill Farm Access Options**	Hill Farm Access - Option A	This option uses the existing left in left out direct accesses on the eastbound and westbound carriageway of the existing A40.
		Hill Farm Access - Option B	This option provides an improved priority junction on the eastbound and westbound carriageway of the existing A40.
		Hill Farm Access - Option C	This option closes the existing direct accesses onto the A40 and provides a new access track that connects the existing Hill Farm access track north on the A40 and the existing A40 single carriageway through the existing Barnard Gate Road to the proposed Barnard Gate Junction.
		Hill Farm Access - Option D	This option closes the existing direct accesses and provides a new access track, with passing bays, that connects Hill Farm to the existing track behind Whitehouse & Salutation Farms through the existing Barnard Gate Road to the proposed Barnard Gate Junction.
14	**Home Farm Access Options**	Home Farm Access - Option A	The original access is stopped up. New access to Home Farm will be via a new access track connecting to the existing Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway.

		Home Farm Access - Option B	The original access is stopped up. New access to Home Farm will be via a new access track connecting to the existing Barnard Lodge Farm track and Barnard Gate Road to the proposed Barnard Gate junction for the A40 dual carriageway.
		Home Farm Access - Option C	The original access is stopped. New access to the A40 to and from Home Farm will be via a new track running east parallel to the proposed eastbound dual carriageway through the Motocross area to the north arm for the proposed Eynsham East Roundabout. Further environmental impact on ponds in motocross area due to the access track alignment.
		Home Farm Access - Option D	This option provides direct access to and from the proposed dual A40 for Home Farm.
15	**Solar Farm/Field Access Options**	Solar Farm Access - Option A	This option utilizes the existing farm access track by upgrading and extending it to take access directly from the westbound carriageway of the dual A40.
		Solar Farm Access - Option B	This option provides access from the southern side of Eynsham West Roundabout with a new track westwards towards and linking up with, the existing access.
		Solar Farm Access - Option C	This option provides access from the proposed development road south of Eynsham West Roundabout with a new track westwards towards and linking up with, the existing access.
16	**Whitehouse Farm and Salutation Farm Access Options**	Whitehouse Farm & Salutation Farm Access - Option A	This option provides direct access to and from the proposed dual A40.
		Whitehouse Farm & Salutation Farm Access - Option B	This option provides a new track utilising the existing A40 (as a result of the A40 dualling) connecting Whitehouse Farm and Salutation Farm to the proposed Barnard Gate Junction via the existing Barnard Gate Road for the A40 dualling.
		Whitehouse Farm & Salutation Farm Access - Option C	This option is similar to Option B by providing access to both farms along the existing road by improving and extending it until it reaches the existing Salutation Farm Access and then providing a new access track around to the north of Salutation farmhouse, travelling westward and linking back into the existing track north of Whitehouse farmhouse.
17	**Chosley Farm Access**	Chosley Farm Access - Option A	The existing access to the A40 eastbound carriageway will remain, and the access to the A40 westbound carriageway will be via the proposed Barnard Gate junction in the event that the existing Hill Farm accesses on the A40 are closed.
		Chosley Farm Access - Option B	This option provides a new track running parallel to the A40 eastbound and connects the existing Hill Farm access track through the A40 single carriageway and the existing Barnard Gate Road to the proposed Barnard Gate Junction.
18	**Lay-by Strategy**	Lay-by Strategy - Option 1	Strategy Option 1 involves no provision of new lay-by facilities along the A40 dualling section, alternatively exploring off-site provision and utilisation of the existing parking lay-bys on the A40 eastbound carriageways.
		Lay-by Strategy - Option 2	Strategy Option 2 would involve providing a Type A lay-by along the eastbound dual carriageway only. This lay-by will be located on the dual carriageway section to the east of Barnard Gate junction, adjacent to Home Farm. This option does not provide a lay-by on the westbound carriageway.
		Lay-by Strategy - Option 3	Strategy Option 3 proposes Type A lay-bys on the eastbound and westbound carriageways, designed to DMRB CD 169.
		Lay-by Strategy - Option 4	Strategy 4 proposes emergency lay-bys on eastbound and westbound carriageways (in line with the CD 169 Type B layout), following the layout of the lay-by facilities implemented west of Hill Farm.

Appendix E – Initial Sift

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
0.2		**Do minimum - Design as per 2018 report**	Dualling as detailed in previous report. Dual Carriageway with alignment as previously designed, 2.5m centre reserve, roundabout at Barnards Gate, Overbridge Access to properties on south eastern side	-2	1	1	1	1	4		
1.1	**Road Alignment 1**	**A40 Rural Dual Carriageway West Link - Option 1**	• Eastbound & westbound access to Hill Farm, agricultural lands and public rights of way affected. • Substandard weaving length both eastbound & westbound between farm access and Witney junction. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Alternative arrangements for all private means of accesses (PMA's) and field accesses onto the existing A40 will need to be provided. • Existing access from Whitehouse & Salutation Farms to be retained but access to the proposed dual carriageway will be through the existing Barnard Gate Road and the proposed Barnard Gate junction. • Alignment taken offline to facilitate the use of the existing A40 to provide non-direct access from Whitehouse Farm, Salutation Farm and potentially Hill Farm et al. • A large part of the dualling is off-line from the existing single carriageway alignment, therefore it is unlikely the existing surface water drainage network could be reused. • New lay-by provided in westbound carriageway will trigger a departure. If the accommodation access is removed, then no departure required. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Location of attenuation ponds to be outside of any fluvial or surface water flood risk areas or any flood compensation areas and is likely to be on south side of the proposed carriageway due to super elevation. • Existing watercourses (Field Ditches) and culverts will be affected by the dualling. • Marginal existing vegetation is to be affected by the dualling. • Survey to determine existing ecology and bio diversity habitation.	**1**	**1**	**2**	**0**	**0**	**4**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option 1 west link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			• Existing utilities are affected extensively. • Extents of the existing public right of way truncated. • A fair (moderate) amount of land take required. • Constructible using appropriate traffic management.								
1.2		**A40 Rural Dual Carriageway Alignment East Link - Option 1**	• Proposed alignment will require a 5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Existing watercourse and culvert will be affected. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Existing flood plain (Chill Brook) area will be affected by the dualling. • Existing vegetation on both sides of the A40 will be significantly affected by the dualling. • Existing pond in the vicinity of Eynsham Motocross track extensively affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • This proposed alignment utilises a large extent of the existing A40 single carriageway. Therefore, the existing	**1**	**0**	**1**	**-1**	**-1**	**0**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility and deliverability. However, medium to high risk with regards to affordability and acceptability due to surcharge on embankment at Chill Brook floodplain and proximity at Barnard Gate farm.	Option 1 east link does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			surface water drainage network, depending on its condition may be able to be reused. • Existing Grade 2 listed building and sites, and conservation areas could be affected by the proposed Barnard Gate junction during construction. • Existing Barnard Gate south alignment removed due to re-alignment and forming the south arm of Barnard Gate Junction. • Direct accesses from Lodge Cottage, Solar, Home, Ambury Close, Fir Tree & Barnard Gate Farms et al. will be closed. • Proposed alignment encroaches on existing vegetation. • Existing lay-by removed and a new lay-by to be provided. • Existing utilities extensively affected by the dualling. • Shared use route provided in westbound verge subject to alternative access for Ambury Close and Fir Tree Farms associated with accommodation bridge. • Extents of the existing public right of way truncated and rerouted. • Proposed alignment impacts marginally on Eynsham Motocross track. • Proposed alignment moved north in the vicinity of Eynsham Motocross track to avoid flood plain. • A fair amount of land take required. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.							The horizontal curves for the east link alignment will require 5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway.	
1.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 1**	• Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway as well as from the road junction the westbound carriageway verge. • Existing utilities are extensively affected by the dualling. • Sections of the existing surface water drainage network may be able to be reused depending on its condition. • Some land take required. • Constructible using appropriate traffic management.	**1**	**1**	**2**	**0**	**0**	**4**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for deliverability, feasibility, affordability and acceptability. Moderate impact on utilities.	Option 1 urban link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
2.1	Road Alignment 2	A40 Rural Dual Carriageway Alignment West Link - Option 2	• Eastbound & Westbound access to Hill Farm, agricultural lands and public right of way affected by the dualling. • Substandard weaving length both eastbound & westbound between farm access and Witney junction. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Existing direct access from Whitehouse & Salutation Farms removed and new access will be through the existing Barnard Gate Road and the proposed Barnard Gate junction. • The proposed Barnard Gate East link dual carriageway (both directions) alignment follows the existing A40 alignment. • New lay-by provided in westbound carriageway will trigger a departure. If the accommodation access is removed, then no departure required. • Direct access from Salutation Farm to the A40 is to be removed. • Sections of the existing surface water drainage network may be able to be reused depending on its condition. • Existing watercourses (field ditches) and culverts will be affected. • Existing vegetation is marginally or minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Existing Barnard Gate South alignment is removed due to re-alignment. • Existing utilities extensively affected by the dualling. • A large amount of land take required. • Constructible using appropriate traffic management.	1	0	2	0	-1	2	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility, deliverability and affordability. However, medium to high risk with regards to acceptability due to close proximity of the alignment to Whitehouse Farm and Salutation Farm properties frontages.	Option 2 west link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
2.2		**A40 Rural Dual Carriageway Alignment East Link - Option 2**	• Proposed alignment will require a 3.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Existing watercourse and culvert will be affected. • Existing flood plain (Chill Brook Area) affected by the dualling. • Existing pond in the vicinity of Eynsham Motocross track. • Proposed alignment and access track encroaches on to existing vegetation. • Survey to determine existing ecology and bio diversity habitation. • Shared use route provided in westbound verge for Ambury Close and Fir Tree Farms & Barnard Gate North Rd realignment is associated with proposed accommodation bridge. • Existing accesses from Lodge Cottage, Ambury Close, Fir Tree, Barnard Gate Farms et.al Farms closed & new access provided. • Existing direct access from A40 to Home Farm removed and new access provided. • Access to Barnard Gate and Home Farms to be realigned. • Existing lay-by removed. • New lay-by provided in eastbound carriageway. • Extents of the existing public right of way truncated and to be rerouted. • Proposed dualling alignment impacts on Eynsham Motocross track. • Proposed alignment moved north to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • A large amount of land take required. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.	**1**	**1**	**0**	**-1**	**-1**	**0**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility and deliverability due to substantial section offline. However, medium to high risk with regards to affordability and acceptability due to surcharge on embankment at Chill Brook floodplain and proximity at Barnard Gate farm. The horizontal curves for the east link alignment will require 3.5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway.	Option 2 east link does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
2.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 2**	This is the same as Option 1 urban link.	**1**	**1**	**2**	**0**	**0**	**4**	The design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for deliverability, feasibility affordability and acceptability. Moderate impact on utilities.	Option 2 urban link to progress to short list.
3.1	**Road Alignment 3**	**A40 Rural Dual Carriageway Alignment West Link - Option 3**	• Eastbound & westbound access to Hill Farm, agricultural lands and public rights of way affected by the dualling. • Existing Whitehouse & Salutation Farms shared use route to be improved along the length of the existing A40 single carriageway. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Existing accesses from Whitehouse Farm to be retained. • This option facilitate the use of the existing A40 to provide non direct access from Whitehouse & Salutation Farms and potentially Hill Farm et al. • It is unlikely the existing surface water drainage network could be reused. • Existing public rights of way opposite Whitehouse Farm truncated and rerouted. • Existing direct access from Salutation Farm to be retained. • The existing shared use route is improved along the length of the existing single carriageway. • Existing watercourses (field ditches) and culverts will be affected by the dualling. • Existing vegetation will be minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Existing utilities are affected by the dualling. • Mainly offline so largest amount of land take required. • Mainly offline construction with tie-ins using appropriate traffic management.	**1**	**1**	**1**	**-1**	**-2**	**0**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for road users. Low risk for feasibility and deliverability. However, there is a high risk with regards to affordability and acceptability due to push back from statutory bodies, significant land severance, etc	Option 3 west link does not go forward to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
3.2		**A40 Rural Dual Carriageway Alignment East Link - Option 3**	• The existing shared use route from Whitehouse & Salutation Farms is to be improved. • Access from Ambury Close, Home & Fir Tree Farms to be maintained. • Non-motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Existing flood plain and Chill Brook will be affected. • Existing pond in the vicinity of Eynsham Motocross Practice track extensively affected by the dualling. • It is unlikely the existing surface water drainage network could be reused. • Existing vegetation will be minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Proposed dualling encroaches onto Ambury Close Farm track and Fir Tree Farm. • The extents of the existing A40 to be truncated in the vicinity of the Eynsham Motocross Practice Track. • Proposed dualling will impact on Eynsham Motocross Practice Track. • Proposed dualling moved north to avoid flood plain. • Existing utilities are affected. • Direct access from Solar Farm to the A40 carriageway is removed. • Mainly offline so largest amount of land take required. • Mainly offline construction with tie-in's using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.	**1**	**1**	**2**	**-2**	**-2**	**0**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for road users. Low risk for feasibility and deliverability. However, there is a high risk with regards to affordability and acceptability due to push back from statutory bodies, significant land severance, greater impact on existing farms etc.	Option 3 east link does not go forward to short list.
3.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 3**	This is the same as Option 1 urban link.	**1**	**1**	**0**	**-1**	**-2**	**-1**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for road users. Low risk for deliverability and feasibility. However, here is a moderate risk with regard to affordability and acceptability	Option 3 urban link does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
										due to land take from development land.	
4.1	**Road Alignment 4**	**A40 Rural Dual Carriageway Alignment West Link - Option 4**	This is the same as Option 1 west link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 1 alignment west link	Option 4 west link to progress to short list.
4.2		**A40 Rural Dual Carriageway Alignment East Link - Option 4**	• Proposed alignment will require a 2.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Minimal impact on vegetation along the existing A40. • Existing lay-by removed. • New lay-by provided in eastbound carriageway. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Significant land take required. • Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. • Existing watercourse (Chill Brook) and culvert will be affected. • Existing flood plain (Chill Brook area) affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Proposed alignment moved north to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be	**1**	**-1**	**0**	**1**	**2**	**3**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Medium risk for feasibility and deliverability due to traffic management (not in line with the brief which says OCC will not accept a situation there is impact on traffic) and land requirements. However, there is a high risk with regards to affordability and acceptability due to push back from land and property owners, significant land take, surcharge on embankment at Chill Brook floodplain etc. The horizontal curves for the east link alignment will require 2.5% super elevation leading to a need for drainage along the central reserve, widening of the	Option 4 east link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.							central reserve and verge for visibility through the section of the super-elevated carriageway.	
4.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 4**	• Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway as well as from the access road junction the westbound carriageway verge. • Existing utilities are extensively affected by the dualling. • Sections of the existing surface water drainage network may be able to be reused depending on its condition. • Some land take required. • Constructible using appropriate traffic management.	**1**	**1**	**2**	**0**	**0**	**4**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for deliverability, feasibility, affordability and acceptability. Moderate impact on utilities.	Option 4 urban link to progress to short list.
5.1	**Road Alignment 5**	**A40 Rural Dual Carriageway Alignment West Link - Option 5**	This is the same as Option 1 west link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 1 alignment west link	Option 5 west link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
5.2		**A40 Rural Dual Carriageway Alignment East Link - Option 5**	• Proposed alignment will require a 3.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Minimal impact on vegetation along the existing A40. • Existing lay-by removed. • New lay-by provided in eastbound carriageway • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Significant land take required. • Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. • Existing watercourse (Chill Brook) and culvert will be affected. • Existing flood plain (Chill Brook area) affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Proposed alignment moved north in the vicinity of Eynsham Motocross track to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.	**1**	**0**	**0**	**0**	**-1**	**0**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility, deliverability and affordability. However, there is a moderate risk with regards to acceptability due to push back from land and property owners especially Ambury Close Farm, significant land take, surcharge on embankment at Chill Brook floodplain etc. The horizontal curves for the east link alignment will require 3.5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway.	Option 5 east link does not progress to short list.
5.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 5**	This is the same as Option 4 urban link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 4 alignment urban link	Option 5 urban link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Delivera bility	Feasi bility	Afforda bility	Accepta bility	Total	Assessment Comments	AECOM Recommen dation
6.1		**A40 Rural Dual Carriageway Alignment West Link - Option 6**	This is the same as Option 1 west link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 1 alignment west link	Option 6 west link to progress to short list.
6.2	**Road Alignme nt 6**	**A40 Rural Dual Carriageway Alignment East Link - Option 6**	• Proposed alignment will require a 3.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Minimal impact on vegetation along the existing A40. • Existing lay-by removed. • New lay-by provided in eastbound carriageway. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Significant land take required. • Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. • Existing watercourse (Chill Brook) and culvert will be affected. • Existing flood plain (Chill Brook area) affected by the dualling. • Existing ponds extensively affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Proposed alignment moved north in the vicinity of Eynsham Motocross track to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.	**1**	**1**	**0**	**-1**	**-2**	**-1**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility and deliverability. However, there is a moderate risk with regards to affordability and acceptability due to push back from Barnard Gate Farm and Home Farm, significant land take, surcharge on embankment at Chill Brook floodplain etc. The horizontal curves for the east link alignment will require 3.5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway.	Option 6 east link does not progress to short list.
6.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham**	This is the same as Option 4 urban link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 4 alignment urban link	Option 6 urban link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
		West Road - Option 6									
7.1	**Road Alignment 7**	**A40 Rural Dual Carriageway Alignment West Link - Option 7**	This is the same as Option 1 west link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 1 alignment west link	Option 7 west link to progress to short list.
7.2		**A40 Rural Dual Carriageway Alignment East Link - Option 7**	• Proposed alignment will require a 2.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Minimal impact on vegetation along the existing A40. • Existing lay-by removed. • New lay-by provided in eastbound carriageway. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Moderate land take required. • Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. • Existing watercourse (Chill Brook) and culvert will be affected. • Existing flood plain (Chill Brook area) affected by the dualling • Survey to determine existing ecology and bio diversity habitation.. • Proposed alignment moved north in the vicinity of Eynsham Motocross track to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority.	**1**	**0**	**0**	**1**	**2**	**4**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility, acceptability and affordability due to minimal impact on land take. However, there is a moderate risk with regards to deliverability due to traffic management requirements etc. The horizontal curves for the east link alignment will require 2.5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway.	Option 7 east link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
7.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 7**	This is the same as Option 4 urban link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 4 alignment urban link	Option 7 urban link to progress to short list.
8.1	**Road Alignment 8**	**A40 Rural Dual Carriageway Alignment West Link - Option 8**	This is the same as Option 1 west link.	**1**	**1**	**2**	**0**	**0**	**4**	This is same as Option 1 alignment west link	Option 8 west link to progress to short list.
8.2		**A40 Rural Dual Carriageway Alignment East Link - Option 8**	• Proposed alignment will require a 2.5% super elevation with a need for central reserve drainage, widened central reserve and verge for visibility through the super elevated section. • Minimal impact on vegetation along the existing A40. • Existing lay-by removed. • New lay-by provided in eastbound carriageway. • Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway along the route. • Moderate land take required. • Alternative accesses will need to be provided for all existing properties and fields currently accessing the existing A40 directly. • Existing watercourse (Chill Brook) and culvert will be affected. • Existing flood plain (Chill Brook area) affected by the dualling • Survey to determine existing ecology and bio diversity habitation.. • Proposed alignment moved north in the vicinity of Eynsham Motocross track to avoid flood plain. • The proposed dual carriageway is mainly off-line from the existing alignment and therefore it is unlikely the existing surface water drainage could be reused. • Direct access from Solar Farm to the A40 carriageway is removed. • Existing utilities are affected by the dualling. • Constructible using appropriate traffic management. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the	**1**	**0**	**0**	**1**	**3**	**5**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for feasibility, acceptability and affordability due to minimal impact on land take. However, there is a moderate risk with regards to deliverability due to traffic management requirements etc. The horizontal curves for the east link alignment will require 2.5% super elevation leading to a need for drainage along the central reserve, widening of the central reserve and verge for visibility through the section of the super-elevated carriageway. This alignment allows for continuity towards the P&R junction without encroaching on the Barclays Land to the south if the proposed Eynsham West	Option 8 east link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			Environment Agency and OCC as the lead local flood authority.							Developer roundabout is not built.	
8.3		**Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 8**	• Non motorised users (NMU) facilities provided in the verge of the eastbound carriageway as well as from the access road junction the westbound carriageway verge. • Existing utilities are extensively affected by the dualling. • Sections of the existing surface water drainage network may be able to be reused depending on its condition. • Some land take required. • Constructible using appropriate traffic management.	**1**	**1**	**2**	**0**	**0**	**4**	This design element has a good impact on the scheme objectives. The link alignment encourages safer travel and free flow of traffic on the A40, hence improving travel times and/or journey reliability for motorised and non-motorised users. Low risk for deliverability, feasibility, affordability and acceptability. Moderate impact on utilities.	Option 8 urban link to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
9.1	Barnard Gate Junction	**Compact Grade Separated Junction - Option A**	• The proposed junction provides an overbridge that could be used by non - motorised users (NMU) to cross the A40. • This layout moves the A40 dual alignment to the south of the existing A40 (single carriageway). • The junction footprint is approximately 23492.5m2, and greater in comparison to other junction options. • This has the largest impermeable area for the 3 options and bridge drainage and embankment drainage will also be required. • Existing utilities are affected. • Grade 2 listed buildings and sites and conservation areas could be significantly impacted during construction and post construction of Barnard Gate Grade Separated Junction. • Grown vegetation loss in minimal but the visual intrusion post construction will be significant. • Survey to determine existing ecology and bio diversity habitation. • Existing watercourse (ditch) on the northbound approach to the grade separated junction will be affected and will require re-routing or culverting. • A large amount of land take required. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**1**	**-1**	**-1**	**0**	This design element has a good impact on the scheme objectives. The junction geometry encourages safer traffic movements and minimal disruption to through traffic on the A40, hence improving travel times and/or journey reliability for road users. Also, the junction layout provides a bridge that can be utilised by non-motorised users for crossing the A40 at Barnard Gate. Low risk with regards to feasibility and deliverability. However, there are moderate risks associated with affordability and acceptability due to visual intrusion, junction footprint leading to significant land take and proximity to conservation areas and grade 2 listed properties.	Option A Compact Grade Separated Junction to progress to short list.
9.2		**Signalised Junction - Option B**	• Reduction of speed limit to 50mph impacting on journey time. • Rural feel to the area making it difficult to enforce reduced speed limit on the link and approach to the junction with safety implications. • Allows for at grade crossing at Barnard Gate Junction. • Junction layout moves the A40 dual west link alignment to the south of the existing highway. • The junction footprint is approximately 3587.4m2. • Smallest impermeable area increase of the options and with reduced attenuation requirements. • Existing utilities are affected. • Grade 2 listed buildings and sites and conservation areas could be significantly impacted by the construction of Barnard Gate Roundabout Option 1. • Grown vegetation minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Existing watercourse (ditch) on the northbound	**-1**	**-1**	**1**	**-1**	**-1**	**-3**	This design element has a poor impact on the scheme objectives. The junction layout provides safe and signalised crossing on the A40 for non-motorised users at Barnard Gate. However, the junction operation regime can disrupt through traffic and encourage slow moving traffic on the A40, leading to increase in driver stress and unreliable travel times. Furthermore, slow moving traffic can lead to increased carbon emission along the A40 route. Low risk with regards to feasibility. However, there are moderate risks associated with	Option B Signalised Junction does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			approach to the signalised junction will be affected and will require re-routing or culverting. • A nominal amount of land take required. • Constructible using appropriate traffic management.							deliverability, affordability and acceptability due to reduction in speed limit and operation and maintenance of traffic signals.	
9.3		**Roundabout Option 1 - (Option C)**	• The proposed Barnard Gate Roundabout (Option 1) layout has been designed to provide connection for the re-aligned Barnard Gate north and south, and the A40 east and west links associated with the dualling alignment Option 1. The inscribed circle diameter (ICD) of the roundabout is 80m. • This option may give potential for SuDS inside roundabout. • Barnard Gate Road Junction access to the realigned Barnard Gate North Alignment to be improved. The proposed Barnard Gate junction footprint impacts on the extents of the existing vegetation located north-west of the existing Barnard Gate junction. • Barnard Gate South alignment realigned and forming the south arm of the proposed Barnard Gate junction. • The existing Barnard Gate South alignment is to be removed due to its realignment. • Grown vegetation minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Existing utilities are affected. • Grade 2 listed buildings and sites, and conservation areas could be significantly affected by the proposed Barnard Gate junction during construction. • Existing watercourse (ditch) on the northbound	**1**	**0**	**0**	**0**	**-1**	**0**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility and affordability. However, there is a moderate risk associated with acceptability due to the junction impact on vegetation and proximity to conversation areas, therefore potential push back from statutory bodies and land owners.	Option C Roundabout Option 1 does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
			approach to the roundabout will be affected and will require re-routing or culverting. • A large amount of land take required. • Constructible using appropriate traffic management.								
9.4		**Roundabout Option 2 - (Option C)**	• The proposed Barnard Gate roundabout (Option 2) layout has been designed to provide connection for the realigned Barnard Gate north and south, and the A40 east and west links associated with the dualling alignment Option 2. The ICD of the roundabout varies for the various dualling alignment options and associated with dualling options 2, 4, 5, 6 and 7. • This option may give potential for SuDS inside roundabout. • Existing utilities are affected. • Grown vegetation minimally affected by the dualling. • Survey to determine existing ecology and bio diversity habitation. • Existing watercourse (ditch) on the northbound approach to the roundabout will be affected and will require re-routing or culverting. • A large amount of land take required. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**1**	**2**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option C Roundabout Option 2 to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
10.1	**Eynsham West Junction**	**Roundabout (3-arm) - Applies to Dual Option 2**	• The proposed roundabout layout apply only to the A40 dualling option 2 alignment design. • The Eynsham West junction northern arm utilises the developer proposed access alignment for the development. • Roundabout inscribed circle diameter (ICD) is 75m. • Existing utilities are affected. • Less land take from development land compared to the roundabout (3-arm) option 2. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**1**	**2**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option 1 Roundabout (3-arm) to progress to short list.
10.2		**Roundabout (3-arm) - Applies to Dual Option 3**	• The proposed roundabout layout apply only to the A40 dualling option 3 alignment design. • The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design. • Roundabout inscribed circle diameter (ICD) is 85m. • Existing utilities are affected. • Large amount of land take required for the roundabout. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**-1**	**0**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk associated with deliverability, feasibility and affordability. However, a medium risk with regards to acceptability due to potential push back from the developer on account of additional land take associated with the junction geometry.	Option 2 Roundabout (3-arm) does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
10.3		**Roundabout (3-arm) - Applies to Dual Options 4, 5, 6 and 7**	• The proposed roundabout layout apply only to the A40 dualling options 4, 5, 6 and 7 alignment design. • The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design. • Roundabout inscribed circle diameter (ICD) is 70m for the various dualling options varies. • Existing utilities are affected. • Less land take from development land compared to the roundabout (3-arm) that applies to dual option 2. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**2**	**3**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility, affordability and acceptability. However, the location of the proposed junction should be agreed with the developer.	Option 3 Roundabout (3-arm) to progress to short list.
10.4		**Roundabout (3-arm) - Applies to Dual Option 8**	• The proposed roundabout layout apply only to the A40 dualling option 8 alignment design. • The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design. • Roundabout inscribed circle diameter (ICD) is 70m for the various dualling options varies. • Existing utilities are affected. • Less land take from development land compared to the roundabout (3-arm) that applies to dual option 2. Roundabout design moved north away from Barclays land south of the existing A40. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**2**	**3**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility, affordability and acceptability. However, the location of the proposed roundabout will move the rural east link north leading to additional land take. The roundabout layout has been designed to consider the ease of extending the east rural carriageway alignment to the P&R junction without land take	Option 3 Roundabout (3-arm) to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
										from Barclays land, in the event that the development roundabout is not built.	
10.5		**Roundabout (4-arm) - Applies to Dual Option 1**	• The proposed roundabout layout apply only to the A40 dualling option 1 alignment design. • The Eynsham West junction northern arm deviates from the developer proposed alignment for the development due to the positioning of the east rural link alignment design. • Roundabout inscribed circle diameter (ICD) is 75m. • Existing utilities are affected. • The southern arm is provided but the alignment falls within the flood zone 3. • Large amount of land take required for the roundabout. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**0**	**-3**	**-2**	This design element has a good impact on the scheme objectives. The roundabout geometry provides uncontrolled crossing facilities on the junction north approach for non-motorised users. The junction operation will have minimal impact on through traffic, however it allows safe traffic movements in all directions. Low risk with regards to deliverability, feasibility, affordability and acceptability. However, the southern arm of the proposed junction is within the flood plain which will lead to push back from the environmental agency and requirement for further engineering mitigation measures.	Option 4 Roundabout (4-arm) does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
11.1	Ambury Close Farm & Fir Tree Farm Access Options	Ambury Close Farm & Fir Tree Farm Access - Option A	• The distance between the direct accesses centre to centre is not adequate for full SSD of 295m required. • The sub-standard spacing between the accesses could affect the safe and expeditious movement of long distance through traffic. • Existing utilities are affected. • Smallest impermeable area increase of the options (reduced attenuation requirements). • No land take required. • Constructible using appropriate traffic management.	-1	0	0	0	-1	-2	This design element has a poor impact on the scheme objectives. The direct accesses could affect safe travel and journey times of through traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there is a high risk associated with acceptability due to the impact direct accesses could have on the safe and expeditious movement of A40 mainline carriageway through traffic.	Option A Ambury Close Farm & Fir Tree Farm Access does not progress to short list.
11.2		Ambury Close Farm & Fir Tree Farm Access - Option B	• Grown vegetation extensively affected. • Survey to determine existing ecology and bio diversity habitation. • Extents of an existing public right of way opposite Fir Tree Farm truncated by the dualling • Existing utilities are affected. • Larger impermeable area than Option A and will also require bridge and embankment drainage. • Land take required along the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	1	0	1	-1	-1	0	This design element has a good impact on the scheme objectives. The access track alignment has no impact on traffic on the A40 and provides a bridge that can be utilised by non-motorised users for safe crossing of the A40 carriageway. Low risk with regards to deliverability and feasibility. However, there are moderate risks associated with affordability and acceptability due to loss of land and visual intrusion associated with the accommodation bridge required for this option.	Option B Ambury Close Farm & Fir Tree Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
11.3		**Ambury Close Farm & Fir Tree Farm Access - Option C**	• Flood plain area affected. • Existing watercourse - Chill Brook - affected. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority. • Grown vegetation extensively affected. • Survey to determine existing ecology and bio diversity habitation. • Existing utilities are affected. • Large increase in impermeable area and will require a culvert over the watercourse. • Land take required along the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**-1**	**1**	**1**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for traffic to and from Ambury Close Farm and Fir Tree Farm. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility and acceptability. Moderate risk associated with affordability due to additional land and watercourse crossing feature required.	Option C Ambury Close Farm & Fir Tree Farm Access to progress to short list.
11.4		**Ambury Close Farm & Fir Tree Farm Access - Option D**	• Grown vegetation minimally affected. • Survey to determine existing ecology habitation. • Extents of an existing public right of way opposite Fir Tree Farm truncated by the dualling • Existing utilities are affected. • Large increase in impermeable area. • Land take required along the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**-1**	**-1**	**-1**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for traffic to and from Ambury Close Farm and Fir Tree Farm. No disruption to traffic on the A40. Low risk with regards to deliverability and feasibility . However, there are medium risks associated with affordability and acceptability due to the potential push back from statutory bodies and developer.	Option D Ambury Close Farm & Fir Tree Farm Access does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
12.1	Barnard Gate Farm Access Option	**Barnard Gate Farm Access - Option A**	• This option is only applicable to dualling Option 2 alignment. • Existing utilities are affected. • Smallest impermeable area increase of the options (reduced attenuation requirements). • No land take required. • Constructible using appropriate traffic management.	**0**	**0**	**0**	**0**	**2**	**2**	This design element has limited impact on the scheme objectives as it relates to traffic disruption on the A40 and journey reliability. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option A Barnard Gate Farm Access to progress to short list.
12.2		**Barnard Gate Farm Access - Option B**	• This option is only applicable to dualling Option 1 alignment. • Existing utilities are affected. • Existing retaining wall across the front of Barnard Gate Farm house affected. • Slightly increased impermeable area over Option A. • Small amount of land take required. • Constructible using appropriate traffic management.	**1**	**0**	**1**	**0**	**-2**	**0**	This design element has a good impact on the scheme objectives. The access track alignment involves the provision of an alternative route for traffic to and from Barnard Gate Farm. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there are medium risks associated with acceptability due to the potential push back from Barnard Gate farm owner.	Option B Barnard Gate Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
13.1	**Hill Farm Access**	**Hill Farm Access - Option A**	• Existing direct access arrangement may be modified subject to consultation with farm owner on high seasonal use with slower vehicles. • Existing substandard weaving length between the Hill Farm North & South Accesses and Witney junction east facing slip roads. Also, the south direct access could trigger a departure due to substandard spacing between the proposed Type A lay-by and Barnard Gate Junction. • Smallest impermeable area increase of the options (reduced attenuation requirements). • No land take required. • Constructible using appropriate traffic management.	**-1**	**0**	**0**	**0**	**-1**	**-2**	This design element has a poor impact on the scheme objectives. The direct accesses could affect safe travel and journey times of through traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there is a high risk associated with acceptability due to the impact direct accesses could have on the safe and expeditious movement of A40 mainline carriageway through traffic especially during sowing and harvesting seasons. Also, departures will be required should the existing accesses remain due to substandard weaving length both eastbound & westbound between accesses and slip roads at Whitney junction.	Option A Hill Farm Access does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
13.2		**Hill Farm Access - Option B**	• Proposed priority junctions to the A40 may be modified subject to consultation with farm owner on high seasonal use with slow vehicles. • Existing substandard weaving length between the Hill Farm North & South Accesses and Witney junction east facing slip roads. Also the south direct access could trigger a departure due to substandard spacing between the proposed Type A lay-by and Barnard Gate Junction. • Extents of an existing public right of way opposite Whitehouse Farm truncated by the dualling. • Existing utilities are affected. • Existing public right of way affected. • Larger increase in impermeable area than Option A. New sections of road may be able to tie into existing drainage system. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**-1**	**1**	**1**	This design element has a good impact on the scheme objectives. The direct access layout minimises traffic disruption resulting from local traffic exiting or entering the A40 at the access locations. Low risk with regards to deliverability, feasibility, affordability (though not substantial) and acceptability. Although safer access geometry is provided there is still direct access onto the A40, and a high risk associated with acceptability due to the impact direct accesses could have on the safe and expeditious movement of mainline carriageway through traffic especially during sowing and harvesting seasons. These new accesses will also require departures due to substandard weaving length both eastbound & westbound between the accesses and slip roads at Whitney junction.	Option B Hill Farm Access to progress to short list.
13.3		**Hill Farm Access - Option C**	• This option is only applicable to dualling Option 1 alignment. This would increase traffic passing next to the grade 2 listed buildings and conservation area. • Existing utilities are affected. • Existing watercourses (field ditches) and culverts affected. • May be able to reuse existing drainage as follows existing road alignment. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**0**	**2**	**3**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for local traffic and non-motorised users. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility, affordability and acceptability. Eliminates the risk associated with providing a direct access to the A40.	Option C Hill Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
13.4		**Hill Farm Access - Option D**	• This would increase traffic passing next to the grade 2 listed buildings and conservation area. • Existing watercourse (field ditch) affected. • Existing utilities are affected. • Will require new drainage network. • Existing utilities are affected by the dualling. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**0**	**-1**	**0**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for local traffic and non-motorised users. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there is a medium risk associated with acceptability due to land severance and potential push back by land owners.	Option D Hill Farm Access does not progress to short list.
14.1	**Home Farm Access**	**Home Farm Access - Option A**	• This option is only applicable to dualling Option 2. • Existing utilities are affected. • Existing retaining wall in front of Barnard Gate Farm house affected. • Smallest impermeable area increase of the options (reduced attenuation requirements). • Existing pond marginally affected. • Survey to determine existing bio diversity habitation of the pond. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**0**	**-1**	**0**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct access and provides alternative route for traffic to and from Home Farm. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility, and affordability. However, there is high risk associated with acceptability due to push back from Barnard Gate Farm owner.	Option A Home Farm Access to progress to short list.
14.2		**Home Farm Access - Option B**	• This option is only applicable to dualling Option 2. • Existing utilities are affected. • Slightly increased impermeable area over Option A - would require new drainage system. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**0**	**2**	**3**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct access and provides alternative route for traffic to and from Home Farm. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility,	Option B Home Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
										affordability and acceptability. Access rights to Barnard Lodge farm access track to be confirmed.	
14.3		**Home Farm Access - Option C**	• Access to and from Home Farm will be via a new track running east, parallel to the proposed eastbound dual carriageway to the north arm for the proposed Eynsham West Roundabout. • Extents of the existing public right of way to be relocated and truncated. • Extents of the existing public right of way truncated and to be relocated. • Proposed track increases the impacts on Eynsham Motocross track. • Large increase in impermeable area. • Existing pond significantly affected. • Survey to determine existing bio diversity habitation of the pond. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**-1**	**-2**	**-2**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct access and provides alternative route for traffic to and from Home Farm. No disruption to traffic on the A40. Low risk with regards to deliverability and feasibility. However, there is high risk associated with affordability and acceptability due to land take from various land plots and push back from developer and land owners.	Option C Home Farm Access does not progress to short list.
14.4		**Home Farm Access - Option D**	• This design element will impact on the potential suitable location for the eastbound Type-A lay-by. • Existing utilities are affected. • Smallest impermeable area increase of the options (reduced attenuation requirements). • No land take required. • Constructible using appropriate traffic management.	**-1**	**0**	**0**	**0**	**-1**	**-2**	This design element has a poor impact on the scheme objectives. The direct accesses could affect safe travel and journey times of through traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there is a high risk associated with acceptability due to the impact direct accesses could have on the safe and expeditious	Option D Home Farm Access does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
										movement of A40 mainline carriageway through traffic.	
15.1	**Solar Farm/Field Access Options**	**Solar Farm/ Field Access - Option A**	• Direct access to the A40 dual carriageway from Solar Farm. • Existing utilities are affected. • Existing watercourse/drainage culvert will be affected. • Flood Plain marginally affected. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority. • Smallest impermeable area increase of the options (reduced attenuation requirements). • No land take required. • Offline construction using appropriate traffic management.	**0**	**0**	**0**	**1**	**0**	**1**	This design element has limited impact on the scheme objectives as it relates to traffic disruption on the A40 due to seasonal use of the field access. Low risk with regards to deliverability, feasibility, affordability and acceptability. Direct access onto the A40 maintained.	Option A Solar Farm Access to progress to short list.
15.2		**Solar Farm/ Field Access - Option B**	• This option is only applicable to a roundabout design where a south arm to future developments south west of Eynsham is not provided. • Existing utilities are affected. • Existing watercourse/drainage culvert will be affected. • Flood Plain marginally affected. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority. • Larger impermeable area than Option A. • Land take required for the total length of the accommodation track. • Offline construction using appropriate traffic management.	**0**	**0**	**0**	**1**	**-1**	**0**	This design element has limited impact on the scheme objectives as it relates to traffic disruption on the A40 due to seasonal use of the access on the developer roundabout. Low risk with regards to deliverability, feasibility and affordability. However, there is moderate risk associated with acceptability due to land take and push back from statutory bodies and developer. The use of the access is only seasonal.	Option B Solar Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
15.3		**Solar Farm/ Field Access - Option C**	• This option is only applicable to a roundabout design where a south arm to future developments south west of Eynsham is provided. • Existing utilities are affected. • Existing watercourse/drainage culvert will be affected. • Flood Plain marginally affected. • A comprehensive flood risk assessment to be undertaken including necessary engagement with the Environment Agency and OCC as the lead local flood authority. • Larger impermeable area than Option A. • Land take required for the total length of the accommodation track. • Offline construction using appropriate traffic management.	**0**	**0**	**0**	**0**	**-2**	**-2**	This design element has limited impact on the scheme objectives as it relates to traffic disruption on the A40 due to seasonal use of the access on the developer roundabout. Low risk with regards to deliverability, feasibility and affordability. However, there is high risk associated with acceptability due to land take and push back from statutory bodies and developer. The use of the access is only seasonal.	Option C Solar Farm Access does not progress to short list.
16.1	**Whitehouse Farm & Salutation Farm Access Options**	**Whitehouse Farm & Salutation Farm Access - Option A**	• The distance between the direct accesses is not adequate for full SSD of 295m required. • Existing utilities are affected. • No land take required. • Constructible using appropriate traffic management.	**-1**	**0**	**0**	**0**	**-1**	**-2**	This design element has a poor impact on the scheme objectives. The direct accesses could affect safe travel and journey times of through traffic on the A40. Low risk with regards to deliverability, feasibility and affordability. However, there is a high risk associated with acceptability due to the impact direct accesses could have on the safe and expeditious movement of A40 mainline carriageway through traffic on the A40.	Option A Whitehouse Farm & Salutation Farm Access does not progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
16.2		**Whitehouse Farm & Salutation Farm Access - Option B**	• This option would increase traffic passing next to the Grade 2 Listed Buildings and Conservation Area. • Existing vegetation will be minimally affected by the improvement. • Survey to determine existing ecology and bio diversity habitation. • Existing utilities are affected. • This new track would utilise the previous A40 alignment so the existing surface water drainage network may be able to be reused (depending on its condition). • No land take required. • Constructible using appropriate traffic management.	**1**	**0**	**0**	**1**	**2**	**4**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for local traffic and non-motorised users. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option B Whitehouse Farm & Salutation Farm Access to progress to short list.
16.3		**Whitehouse Farm & Salutation Farm Access - Option C**	• This would increase traffic passing next to the Grade 2 Listed Buildings and Conservation Area. • Existing utilities are affected. • Parts of the new track will require new drainage network. • Land take required for the total length of the accommodation track. • Mainly offline construction using appropriate traffic management.	**1**	**0**	**0**	**1**	**0**	**2**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for local traffic and non-motorised users. No disruption to traffic on the A40. Low risk with regards to deliverability, feasibility, affordability and acceptability. However, the property owners may push back on the Hill Farm Option C proposal due to all Hill Farm traffic passing their property frontage.	Option C Whitehouse Farm & Salutation Farm Access to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
17.1	**Chosley Farm**	**Chosley Farm Access - Option A**	• The existing Hill Farm direct accesses to be stopped up. Therefore, Chosley Farm access to the A40 westbound carriageway will be through the proposed Barnard Gate Junction. • No land take required.	**0**	**0**	**0**	**0**	**2**	**2**	This design element has limited impact on the scheme objectives as it relates to traffic disruption on the A40 and journey reliability. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option A Chosley Farm Access to progress to short list.
17.2		**Chosley Farm Access - Option B**	• The existing Hill Farm direct accesses to be stopped up. Therefore, Chosley Farm access to the A40 westbound carriageway will be through a new track connecting through the Hill Farm access track, the existing A40, Barnard Gate Road and proposed Barnard Gate Junction. • This option would increase traffic passing next to the Grade 2 Listed Buildings and Conservation Area. • Existing vegetation will be minimally affected by the improvement. • Survey to determine existing ecology and bio diversity habitation. • Existing utilities are affected. • Land take required. • Constructible using appropriate traffic management.	**0**	**1**	**1**	**-1**	**-1**	**0**	This design element has a good impact on the scheme objectives. The access track alignment involves closure of the existing direct accesses and provides alternative route for Chosley Farm. No disruption to traffic on the A40. Low risk with regards to deliverability and feasibility. However, there are moderate risk associated with affordability and acceptability due to land take from various land parcels and push back from landowners.	Option B Chosley Farm Access to progress to short list.
18.1	**Lay-by Strategy**	**Lay-by Strategy - Option 1**	• Ordinary Goods Vehicles (OGV) facility needs to be provided in line with existing eastbound and westbound OGV flows. • The facility will require access to both eastbound and westbound carriageways of the A40. • Westbound lay-by counts are inconclusive, therefore further investigation is required.	**1**	**0**	**0**	**-2**	**2**	**1**	This design element has a good impact on the scheme objectives and considers offsite parking facilities. This provision will encourage safer travels for motorised road users. Low risk with regards to deliverability, feasibility and affordability. It is likely that this lay-by strategy option will not be accepted due to high demand for parking facilities along the A40 route.	Option 1 Lay-by Strategy to progress to short list.

Item No.	Location	Options	Comments	Scheme Objectives	Deliverability	Feasibility	Affordability	Acceptability	Total	Assessment Comments	AECOM Recommendation
18.2		**Lay-by Strategy - Option 2**	This Type A lay-by parking area will be a minimum length of 130m.	**-1**	**0**	**0**	**0**	**-1**	**-2**	This design element has a poor impact on the scheme objectives due to no provision of westbound parking facilities on the dualling. This can lead to poor operation of the A40, and undesirable and unsafe effects on motorised road users. Low risk with regards to deliverability, feasibility, affordability and acceptability. However, high demand for parking along the A40 westbound route may lead to driver fatigue and stress, hence undesirable in terms of safety.	Option 2 Lay-by Strategy does not progress to short list.
18.3		**Lay-by Strategy - Option 3**	• Proposed eastbound Type A lay-by parking area length will be 130m, sited to the east of Barnard Gate junction and parallel to Home Farm. • Proposed westbound Type A lay-by parking area length will be 130m and sited a minimum of 450m from the proposed Barnard Gate junction. • The location of the westbound lay-by may trigger a departure from standard if the Hill Farm accommodation bridge access remains open.	**1**	**0**	**0**	**0**	**2**	**3**	This design element has a good impact on the scheme objectives and considers online parking facilities. This provision will encourage safer travels for motorised road users. Low risk with regards to deliverability, feasibility, affordability and acceptability.	Option 3 Lay-by Strategy to progress to short list.
18.4		**Lay-by Strategy - Option 4**	This strategy does not provide short rest opportunities or replace lost parking area capacity.	**-1**	**0**	**0**	**0**	**-1**	**-2**	This design element has a poor impact on the scheme objectives due to inadequate parking facilities provisions on the dualling. This can lead to poor operation of the A40, and undesirable and unsafe effects on motorised road users. Low risk with regards to deliverability, feasibility and affordability. It is likely that this lay-by strategy option will not be acceptable due to high demand for HGV and OGV parking through and along this length of the A40 route.	Option 4 Lay-by Strategy does not progress to short list.

Appendix F – Stage 2 Sifting Criteria

Table 9-2. Stage 2 Detailed Sifting Criteria

Business Case - Elements	Category	Criteria		Sub-criteria
Strategic Case	S1. Scheme Objectives	S1.1	Scheme Objectives	Unlock the delivery of 4,813 additional homes along the A40 Smart Corridor in support of the Housing and Growth Deal
				Support the delivery of 2,222 affordable homes along the A40 Smart Corridor
				Ensure the impact of additional housing on the transport network is acceptable and associated impacts on it are adequately mitigated
				Unlock economic growth at key employment sites along the 'Knowledge Spine' at Oxfordshire Cotswolds Garden Village
				Encourage sustainable BUS travel between Eynsham/Witney/wider area and Oxford
				Encourage sustainable CYCLE and PEDESTRIAN travel between Eynsham/Witney/wider area and Oxford
		S.1.2	A40 STP2 scheme objectives	To improve travel times and/or journey reliability between Witney/Carterton and Oxford
				To reduce carbon emissions and other pollutants associated with travel
				To stimulate economic growth within Oxford, West Oxfordshire and the Oxfordshire Knowledge Spine
				To encourage safer travel between Witney/Carterton and Oxford
				Interface with existing and committed schemes in the corridor including P&R
		S1.3	National Policies	Oxfordshire's Housing and Growth Deal
				Housing White Paper
		S1.4	Local Policies	Oxfordshire Infrastructure Strategy
				Oxfordshire's Local Plan
				West Oxfordshire's Local Plan 2031
				Connecting Oxfordshire's Local Transport Plan 4
				OCC A40 Walking and Cycling
Economic Case	E1. Impact on the Economy	E1.1	For this stage of assessment, score for ALL users i.e. business, freight, commuters, leisure and education trips	PT travel time changes
				Highway user travel time changes
				Walk and cycle
				Cost of Travel
				Construction impacts – walk and cycle
				Construction period highway traffic impacts
				Construction period PT impacts
		E1.2	Reliability	Buses
				Private vehicles
				NMUs (walk and cycle)
		E1.3	Regeneration	

Business Case - Elements	Category	Criteria		Sub-criteria
		E1.4	Wider Impacts; Agglomeration benefits	
	E2. Impact on the Environment	E2.1	Noise	Construction Period Environmental Impacts
				Operation Period Environmental Impacts
		E2.2	Air Quality	Estimated change in NOx/PM emitted
		E2.3	Greenhouse Gases	Change in CO2/Carbon
		E2.4	Landscape	Check EIA for Science Transit Scheme
		E2.6	Historic Environment	Check EIA for Science Transit Scheme
		E2.7	Biodiversity	Check EIA for Science Transit Scheme
		E2.8	Water environment	Flood mitigation
				Water quality
		E2.9	Environment (other)	SSSI, Habitats, etc
	E3. Impact on Society	E3.2	Physical activity	Health benefits
		E3.3	Journey Quality	Journey ambience
		E3.4	Accidents	Impact on RATE of incidents
		E3.5	Security	Crime
				Safety
		E3.6	Access to Services	Access to a range of goods, services, people and places, including education
		E3.7	Affordability	Affordability – fares, cost of travel
		E3.8	Severance	Severance
		E3.9	Equalities Impacts	EqIA, Impacts on protected characteristics
		E3.10	Accessibility - access to the road/infrastructure for residents/landowners	Farmers, Residents etc.
Financial Case	F1. Capital and Revenue Costs	F1.1	Infrastructure capital costs, operating and maintenance costs	Capital costs/Consider Affordability against total scheme budget
				Operation and maintenance costs
Management Case	M1. Practical Feasibility	M1.1	Engineering, interfaces, complexity and feasibility	Design and Construction - Include programme etc. design standards
		M1.2	Effect on the network - TM, Delays etc during construction	Prep and Management during construction
		M1.3	Possibility to change option - option flexibility	Future Proofing
	M2. Stakeholder acceptability	M2.1	Local authorities, delivery partners, statutory bodies, landowners, Utility companies	Local authorities, alignment with central government policy
				Delivery partners – Homes England, DfT
				Utility companies
				Statutory bodies (EA, district councils, parish councils, NE)
				Technical Stakeholders – EA, NR, Canal and Rivers Trust, Natural England
				Environment Agency
				Network Rail

Business Case - Elements	Category	Criteria		Sub-criteria
				Natural England
				Canal and Rivers Trust
				District Councils
				Parish Councils
				Utilities
				Non-Statutory bodies (residents association groups, cyclox, horse group)
				Land owners perception
				Land and property impacts, access to property, businesses etc
	M3. Public Acceptability/Interest	M3.1	Public acceptability/interest	Public view on scheme components. Earlier consultation responses may help inform this. Views are relevant when related to the actual scheme impacts e.g. traffic flows, congestion, noise, air quality etc, rather than whether the scheme enables more development, which is a separate issue, and should be treated at the A40 overall scheme programme level.
Commercial Case	C1.1 Funding and Income	C1.1	Scope to meet Treasury criteria	Homes England conditions
	C2 Complexity of Delivery	C2.1	Design – Dependency and interface risk, Timescale of delivery during design phase, Contractual complexity and risks	Highways Design in general
				Park and Ride Design: How does design interface with/impact P&R access/egress
				Interface with other schemes considered: Garden Village masterplan
		C2.2	Construction – Dependency and interface risk in relation to other projects, timescales of delivery during construction, contractual complexity and risks	Highways
				Park and Ride construction
				Interface with other schemes considered: Garden Village masterplan
	C2. Complexity of Delivery	C2.3	Commercial Viability - Complexity of procurement of contractor	Breaking down of schemes to ease the delivery (specialist partners for example). Include consideration of things such as D&B

Appendix G – Stage 2 Sifting Outcome Overview

Table 9-3 Stage 2 Sifting Outcome

Number	Options		Scoring					
			Strategic	Economic	Financial	Management	Commercial	Total
1	**Dual Alignment Option 1**	**Max possible score**	**36**	**64**	**4**	**40**	**16**	**160**
1.1	A40 Dual Alignment Option 1	A40 Rural Dual Carriageway Alignment West Link - Option 1	18	7	-2	-2	4	**26**
1.3		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 1	18	6	-2	-5	4	**21**
2	**A40 Dual Alignment Option 2**							
2.1	A40 Dual Alignment Option 2	A40 Rural Dual Carriageway Alignment West Link - Option 2	18	4	-3	-7	4	**16**
2.3		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 2	18	6	-2	-5	4	**21**
4	**A40 Dual Alignment Option 4**							
4.2	A40 Dual Alignment Option 4	A40 Rural Dual Carriageway Alignment East Link - Option 4	18	1	-3	-8	4	**12**
4.3		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 4	18	6	-2	-5	4	**21**
8	**A40 Dual Alignment Option 8**							
8.2	A40 Dual Alignment Option 8	A40 Rural Dual Carriageway Alignment East Link - Option 8	18	4	-2	-7	4	**17**
8.3		Extent of Eynsham Dual Carriageway Alignment Eynsham West Road - Option 8	18	9	-2	-4	4	**25**
9	**Barnard Gate Junction**							
9.1	Barnard Gate Junction	Compact Grade Separated Junction - Option A	18	-3	-4	-14	3	**0**
9.4		Roundabout Option 2 – Option C	18	9	-2	1	4	**30**
10	**Eynsham West Junction**							
10.1	Eynsham West Junction	Roundabout (3-arm) - Applies to Dual Option 2	18	8	-3	-3	4	**24**
10.3		Roundabout (3-arm) - Applies to Dual Options 4, 5, 6 and 7	18	9	-3	-3	4	**25**
10.4		Roundabout (3-arm) - Applies to Dual Option 8	18	8	-2	4	4	**32**

11	**Ambury Close Farm & Fir Tree Farm Access**							
11.2	Ambury Close Farm & Fir Tree Farm Access	Option B	0	-12	-4	-5	0	**-21**
11.3		Option C	0	-1	-2	3	0	**0**
12	**Barnard Gate Farm Access**							
12.1	Barnard Gate Farm Access	Option A	0	3	0	3	0	**6**
12.2		Option B	0	0	-2	-2	0	**-4**
13	**Hill Farm Access**							
13.2	Hill Farm Access	Option B	0	-4	-2	-2	0	**-8**
13.3		Option C	0	1	-2	3	0	**2**
14	**Home Farm Access**							
14.1	Home Farm Access	Option A	0	0	-2	3	0	**1**
14.2		Option B	0	2	-2	-4	0	**-4**
15	**Solar Farm/Field Access**							
15.1	Solar Farm/Field Access	Option A	0	1	0	5	0	**6**
15.2		Option B	0	-1	-2	-2	0	**-5**
16	**Whitehouse Farm and Salutation Farm Access**							
16.2	Whitehouse Farm and Salutation Farm Access	Option B	0	-2	-1	5	0	**2**
16.3		Option C	0	1	-2	-4	0	**-5**
17	**Chosley Farm Access**							
17.1	Chosley Farm Access	Option A	0	4	0	2	0	**6**
17.2		Option B	0	0	-2	-2	0	**-4**
18	**Lay-by Strategy Options**							
18.1	Lay-by Strategy Options	Option 1	0	-1	-4	-2	4	**-3**
18.3		Option 3	4	0	-2	-3	4	**3**

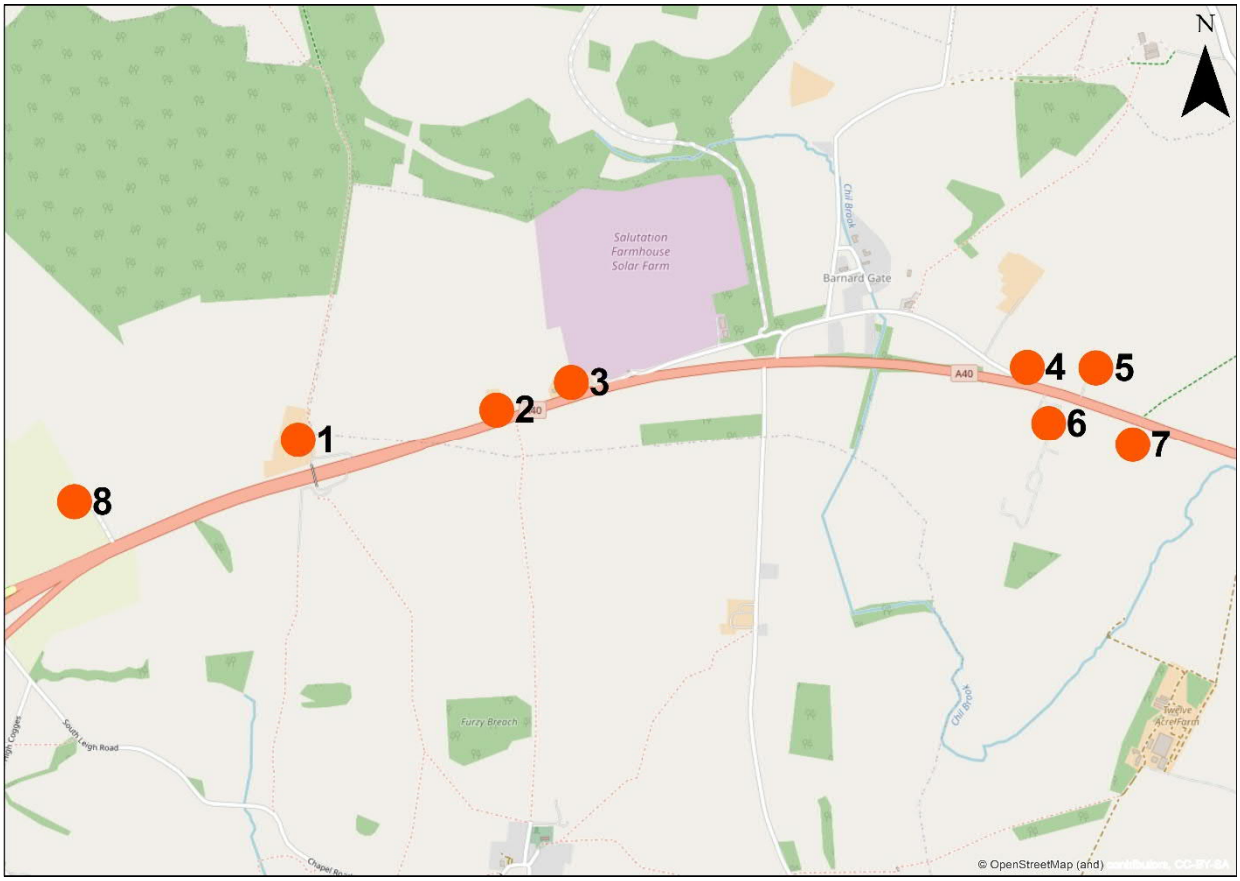
Appendix H – Farm Trip Generation Technical Note

Project:	**A40 Dualling – Farm Accesses**	Job No:	**60615257.T003**
Subject:	Farm Access Trip Generation		
Prepared by:	Kimberley Pettingill	Date:	20/01/2021
Checked by:	Andrew Cuthbert	Date:	26/01/2021
Verified by:	Elizabeth Judson	Date:	29/01/2021
Approved by:	Andrew Cuthbert	Date:	29/01/2021

1. Introduction

1.1. The AECOM Transport Planning team have been asked to undertake a task to calculate the daily vehicular trip generation for eight farm sites located in the vicinity of the A40 to the east of Witney, Oxfordshire in association with Element 1 (The Dualling Section) of the A40 Smart Corridor Scheme. The farms currently take access either directly onto the A40, or onto roads that lead to the A40. The location of the eight farm sites are shown in **Figure 1** below.

Figure 1: Farm Site Locations



1.2. **Table 1** below sets out what AECOM's understanding of the current activities/ land uses at each farm site are. This has been based on online imagery, and aerial photography and through information obtained from the surveyors working on the Project. It may be that there are different or additional land uses on the sites than those stated below, further detail may be able to be determined from individual landowners.

Table 1: Farm Site Land Uses

Farm Site	Name	Land uses
1	Hill Farm Livery Yard	Livery yard (stables, paddocks, grazing) Residential dwelling Agricultural use
2	Whitehouse Farm	4 residential dwellings (assume farming activities do not take place)
3	Salutation Farm	3 residential dwellings (no agricultural uses but the estate behind them has a right of way through the farm yard)
4	Barnard Gate Farm	Residential dwelling (understood to be predominantly residential, although they do have land it is not within arable production, there may be occasional livestock or hay cutting throughout the year)
5	Home Farm	Travellers site (approximately 12 caravans/ properties). The land is not in arable rotation but there is a small holding with livestock and hay making.
6	Ambury Close Farm	Egg production farm (with articulated vehicles arriving several times a week) Residential dwelling
7	Fir Tree Farm	Residential dwelling Christmas tree centre
8	Chosley Farm	2 residential dwellings Agricultural use

2. Traffic Count Methodology

2.1. In order to gain an understanding of the current vehicular trip generation at each farm site, Manual Classified Traffic Counts (MCC) were undertaken at each of the farm site accesses covering a seven day period, between Tuesday 08th December and Monday 14th December 2020. The two-way daily vehicular traffic generation at each farm site is summarised in Table 2 below, and a more detailed summary of the counts are provided in **Appendix A**. The results are shown as a seven day average (Monday to Sunday) and as a five-day average (Monday to Friday), and are broken down by Light Vehicles (LVs: cars, vans and motorcycles), Heavy Goods Vehicles (HGV: lorries and buses), and agricultural vehicles.

Table 2: Farm Site Two-way Vehicular Traffic Generation (7 day average/ 5 day average)

Farm Site	Name	Daily (7 day, Mon-Sun) Average (Total trips, Arrs & Deps)				Weekday (5 day, Mon-Fri) Average (Total Trips, Arrs & Deps)			
		LV	HGV	Agricultural	Total	LV	HGV	Agricultural	Total
1	Hill Farm Livery Yard*	1143	7	0	**1149**	1270	9	0	**1279**
2	Whitehouse Farm	13	1	0	**14**	15	1	0	**16**
3	Salutation Farm	4	0	0	**4**	4	0	0	**4**
4	Barnard Gate Farm	10	0	0	**10**	11	0	0	**11**
5	Home Farm	30	1	0	**31**	35	1	0	**36**
6	Ambury Close Farm	45	1	0	**46**	54	1	0	**55**
7	Fir Tree Farm	114	1	0	**115**	83	1	0	**84**
8	Chosley Farm	29	0	0	**29**	30	0	0	**30**

* Figures reflect combined access/ egress from/ to both sides of A40. Separate counts for each are available.

2.2. Table 3 below details the arrivals and departures from each of the Farm Site 1 (Hill Farm) accesses to/ from the A40. The results are shown as a seven day average (Monday to Sunday) and as a five-day average (Monday to Friday), and are broken down by Light Vehicles (LVs: cars, vans and motorcycles), Heavy Goods Vehicles (HGV: lorries and buses), and agricultural vehicles (of which none were recorded in the survey).

Table 3: Vehicular Arrivals and Departures from Farm Site 1 (Hill Farm) A40 Accesses (7 day average/ 5 day average)

Access/ Egress	Daily (7 day, Mon-Sun)							Weekday (5 day, Mon-Fri) Average						
	Arrs			Deps			Total 2-way	Arrs			Deps			Total 2-way
	LV	HGV	Total	LV	HGV	Total		LV	HGV	Total	LV	HGV	Total	
A40 Eastbound	551	3	554	27	0	28	582	615	4	619	28	1	28	648
A40 Westbound	21	0	21	544	3	546	568	21	0	21	607	4	611	631
Total	572	3	575	571	3	574	1149	636	4	640	635	4	639	1279

2.3. It is acknowledged that the traffic counts were undertaken during December which is not considered a 'neutral' month, and that the vehicular trip generation for a number of the sites will be seasonal (particularly those with agricultural uses and Fir Tree Farm, which is a Christmas Tree centre). The data collection period was determined to a large extent by the need to carry it out between two successive Covid-19 lockdown periods and is therefore regarded as the most suitable period available in recent months. However, traffic flows may still have been below normal levels due to the ongoing Pandemic. Therefore, a separate trip generation exercise has been undertaken using TRICS data (where possible) in order to validate the figures shown in Table 2, this is detailed further in Section 3 below.

2.4. The traffic count data obtained for Site 7, a site which accommodates a Christmas tree centre is considered reliable and appropriate as the data covers a period at which the site is likely to be at its busiest. Therefore, there should be no need to validate the dataset for this site.

2.5. It is recommended that the land owners are consulted to determine the level of seasonality at each site in order to allow any factors to be applied to the data so that it reflects the worst-case scenario with regards to vehicular traffic generation.

3. TRICS Trip Generation Calculation Methodology

3.1. In order to validate the traffic count data a trip generation exercise has been undertaken using the industry standard TRICS database (version 7.7.4) to calculate a likely daily trip generation for each farm site. For known land uses at each site (i.e. livery yard/ egg production farm/ travellers site), land use specific trip rates have been sought. Where trip rates are not available for these uses, but historic traffic count information is available within the database, this data has been sought. It should be noted, that AECOM can only predict traffic generation for known uses within each of the sites.

3.2. There are no farm sites within the TRICS database, however the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) uses information/ data collected from farms concerning the transport associated with the farm household, the farm business and diversification businesses on the farm. Whilst it is almost nineteen years old, this is the most recent source of data AECOM are aware of. A total of 28 farms were selected as case studies, and for those who returned data, all trips over the course of a week were recorded. In addition, automated traffic counters were installed at seven farms to record traffic movements over a week. The findings arising from this data provide insight into the actual transport use generated by farms.

3.3. The above investigation calculated the average number of weekly vehicle trips generated by farm businesses, farm households and farm diversification activities:

- **Farm businesses:** an average of 40 one-way trips per week (or 20 two-way/ return trips) (not including trips made by those living on the farm, see below)
- **Farm Households:** an average of 26 one-way trips per week (or 13 two-way/ return trips), per household
- **Farm Diversification Businesses:** an average of 56.6 trips per week, per business (or 28.3 two-way/ return trips)

3.4. In order to calculate the typical daily vehicular trip generation for the 'Farm Businesses' and 'Farm Households', the number of one-way trips were calculated for each day. For the 'Farm Businesses' the average was taken over five days, and for the 'Farm Households' the average was taken over seven days, resulting in a total number of eight one-way trips (assumed to consist of four arrivals and four departures) per day per 'Farm Business', and four one-way trips (assumed to consist of two arrivals and two departures) per day per 'Farm Household'.

3.5. The above figures have been used where a farmhouse is present on the site, and where farm businesses activities are understood to take place.

4. Trip Generation Prediction

4.1. Table 4 below provides a high-level overview of the methodology adopted to provide a vehicular trip generation prediction for each site. Further detail for each is provided in the sections below.

Table 4: Farm Site Trip Generation Methodology Overview

Farm Site	Name	Trips/ Trip Rates used	Daily Vehicular Arrivals	Daily Vehicular Departures	Total Trips
1	Hill Farm Livery Yard	Farm Households x 1	2	2	4
		Farm Businesses x 1	4	4	8
		TRICS (no livery yard sites within current TRICS database, so similar livery yard site used from historic TRICS sites. Site located in a similar 'free standing' location).	35	37	72
		Total	**41**	**43**	**84**
2	Whitehouse Farm	Farm Households x 4	8	8	16
3	Salutation Farm	Farm Households x 3	6	6	12
		Farm Businesses x 1	4	4	8
		Total	**10**	**10**	**20**
4	Barnard Gate Farm	Farm Households x 1	2	2	4
5	Home Farm	TRICS (no traveller sites within current TRICS database, so similar travellers site used from historic TRICS sites. Site located in a similar 'free standing' location).	46	46	92
6	Ambury Close Farm	Farm Households x 1	2	2	4
		TRICS (no egg production farms within current TRICS database, so similar egg production farm used from historic TRICS sites. Site located in a similar 'free standing' location).	7	7	14
		Total	**9**	**9**	**18**
7	Fir Tree Farm	Farm Households x 1	2	2	4
		No comparable TRICS sites available, or other sources of trip generation information available. Therefore, trip generation is reliant on traffic count data (see Section 2).	-		
8	Chosley Farm	Farm Households x 2	4	4	8
		Farm Businesses x 1	4	4	8
		Total	**8**	**8**	**16**

Farm Site 1: Hill Farm Livery Yard

4.2. It is understood that there is currently a livery yard operating at the farm, and there is a dwelling on site as well as some agricultural use.

4.3. In order to gain an understanding of the likely vehicular trip generation of the livery yard, the TRICS database was interrogated. There are currently no livery yards within the current TRICS database and therefore in the absence of this data, the historic TRICS sites available within the database were interrogated instead. One site located in a similar 'free standing' location was found, and the traffic count data used to gain an understand of the likely vehicular trip generation associated with this land use. No information was available as to the scale of the Livery Yard at Hill Farm and the assumption must be that the trip rate is dependent upon the number of horses stabled there and the extent to which the yard offers riding lessons, for example. This data indicates that the livery yard element of this site is likely to generate 35 daily arrivals, and 37 departures (72 vehicular trips in total). The TRICS report for the livery yard is held in **Appendix B**.

4.4. In order to gain an understanding of the likely vehicular trip generation of the farm household, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of four trips per day are assumed for this element of the site.

4.5. In order to gain an understanding of the likely vehicular trip generation of the farm agricultural use at the site, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Businesses' was used, as per paragraph 3.4. Therefore, a total of eight trips in total per day are assumed for this element of the site.

4.6. Therefore, a total daily vehicular trip generation of 84 vehicular trips in total has been calculated for Farm Site 1.

Comparison with Traffic Count Data

4.7. The daily traffic generation predicted through the TRICS database (84 trips in total) is significantly lower than counted at the site during the survey period (1149 in total), and this may be due to a range of factors such as there being other land uses on the site that are unknown to AECOM, the livery yard being larger than the site included within the TRICS database, farming activities or an event taking place during the survey period. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels. The landowner should be asked how the counted traffic flows compare to their busiest period, in order to determine what the 'worst-case' daily traffic flows are throughout the year.

4.8. The suspicion at this location is that the compact grade-separated junction serving Hill Farm is being used by general traffic, for example drivers making U-turns as part of a trip between the A40 to the west of Witney and the eastern end of the town, because of the lack of an all-movements junction at the eastern end of the Witney bypass.

Farm Site 2: Whitehouse Farm

4.9. It is understood that there are currently four residential dwellings at the farm.

4.10. In order to gain an understanding of the likely vehicular trip generation of the four farm households, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm

Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of 16 trips in total per day are assumed for this site.

Comparison with Traffic Count Data

4.11. The daily traffic generation calculated using TRICS (16 trips in total) is very similar to that counted during the survey period (14 trips in total); therefore, it is considered that the survey data can be considered relatively accurate.

Farm Site 3: Salutation Farm

4.12. It is understood that there are currently three residential dwellings at the farm, and the estate behind has a right of way through the farm yard; therefore, for the purposes of this trip generation note, it is assumed that the vehicular trips associated with a farming business will also use the access.

4.13. In order to gain an understanding of the likely vehicular trip generation of the farm households, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of 12 trips in total per day are assumed for this element of the site.

4.14. In order to gain an understanding of the likely vehicular trip generation of the agricultural use behind the site, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Businesses' was used, as per paragraph 3.4. Therefore, a total of eight trips in total per day are assumed for this element of the site.

4.15. Therefore, a total daily vehicular trip generation of 20 vehicular trips in total has been assumed for Farm Site 3.

Comparison with Traffic Count Data

4.16. The daily traffic generation calculated using TRICS (20 trips in total) is higher than that counted during the survey period (4 trips in total); however, this may be due to a number of reasons such as the farm business activities that have right of way through the yard do not use this yard, or were not taking place at the time of the survey or due to the current restrictions in place as a result of the COVID-19 pandemic. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels, and to gain a better understanding of the use of this access for farming activities by the adjacent landowner. The landowner should be asked how the counted traffic flows compare to their busiest period, in order to determine what the 'worst-case' daily traffic flows are throughout the year.

Farm Site 4: Barnard Gate Farm

4.17. It is understood that there is currently one residential dwelling at the farm. It is understood that although there is land associated with the site, it is currently not within arable production, and there may be occasional livestock or hay cutting throughout the year.

4.18. In order to gain an understanding of the likely vehicular trip generation of the farm household, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of four trips in total per day are assumed for this site.

Comparison with Traffic Count Data

4.19. The daily traffic generation calculated using TRICS (4 trips in total) is lower than that counted during the survey period (10 trips in total); however, this may be due to a number of reasons such as farming activities taking place within the site that are unknown to AECOM, additional dwellings being present on the land that are unknown to AECOM, or an event taking place during the week of the survey. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels, and to gain a better understanding of the activities that occur at this site. The landowner should be asked how the counted traffic flows compare to their busiest period (if applicable), in order to determine what the 'worst-case' daily traffic flows are throughout the year.

Farm Site 5: Home Farm

4.20. It is understood that the site is currently in use as a travellers site, with approximately 12 caravans/ properties. The land is not in arable rotation but there is a small holding with livestock and hay making.

4.21. In order to gain an understanding of the likely vehicular trip generation of the travellers site, the TRICS database was interrogated. There are currently no travellers sites within the current TRICS database and therefore in the absence of this data, the historic TRICS sites available within the database were interrogated instead. One site located in a similar 'free standing' location was found, and the traffic count data used to gain an understanding of the likely vehicular trip generation associated with this land use. This data indicates that the site is likely to generate 46 daily arrivals, and 46 departures (92 vehicular trips in total). The TRICS report for the travellers site is held in **Appendix B**.

Comparison with Traffic Count Data

4.22. The daily traffic generation calculated using TRICS (92 in total) is higher than that counted during the survey period (31 in total); however, this may be due to a number of reasons such as the site within the TRICS database not being comparable to Farm Site 5 (i.e. it is not clear whether the TRICS site is used for farming activities), or site activities were not taking place at the time of the survey or due to the current restrictions in place as a result of the COVID-19 pandemic. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels. The landowner should be asked how the counted traffic flows compare to their busiest period (if applicable), in order to determine what the 'worst-case' daily traffic flows are throughout the year.

Farm Site 6: Ambury Close Farm

4.23. It is understood that there is currently an egg production farm operating at the farm, and there is a dwelling on site.

4.24. In order to gain an understanding of the likely vehicular trip generation of the egg production yard, the TRICS database was interrogated. There are currently no egg production farms within the current TRICS database and therefore in the absence of this data, the historic TRICS sites available within the database were interrogated instead. One site located in a similar 'free standing' location was found, and the traffic count data used to gain an understanding of the likely vehicular trip generation associated with this land use. This data indicates that the egg production farm element of this site is likely to generate 7 daily arrivals, and 7 departures (14 vehicular trips in total). The TRICS report for the egg production farm is held in **Appendix B**.

4.25. In order to gain an understanding of the likely vehicular trip generation of the farm household, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification

Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of four trips in total per day are assumed for this element of the site.

4.26. Therefore, a total daily vehicular trip generation of 18 vehicular trips in total has been calculated for Farm Site 6.

Comparison with Traffic Count Data

4.27. The daily traffic generation predicted through the TRICS database (18 in total) is lower than counted at the site during the survey period (46 in total), and this may be due to a range of factors such as the egg production farm being larger than the site included within the TRICS database, eggs being sold directly to the general public from the site (this was not the case with the egg farm in the TRICS database); farming activities or an event taking place during the survey period. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels, and to gain a better understanding of the activities that occur at this site. The landowner should be asked how the counted traffic flows compare to their busiest period (if applicable), in order to determine what the 'worst-case' daily traffic flows are throughout the year.

Farm Site 7: Fir Tree Farm

4.28. It is understood that there is currently a Christmas tree centre operating at the farm, and there is a dwelling on site.

4.29. In order to gain an understanding of the likely vehicular trip generation of the farm household, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of four trips in total per day are assumed for this element of the site.

4.30. The TRICS database was interrogated to determine whether there is any available data for similar land uses to the Christmas tree farm, however no sites are available within the current or historic sites within the database. Alternative sources of trip generation information for similar site could not be found and therefore, the trip generation for this element of the site is reliant on traffic count data (see Section 3).

Farm Site 8: Chosley Farm

4.31. It is understood that there are currently two dwellings on site as well as some agricultural use at this farm.

4.32. In order to gain an understanding of the likely vehicular trip generation of the farm households, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Households' was used, as per paragraph 3.4. Therefore, a total of eight trips in total per day are assumed for this element of the site.

4.33. In order to gain an understanding of the likely vehicular trip generation of the farm agricultural use at the site, the trip generation calculated as part of the TRICS report 'An Investigation into the Treatment of Traffic and Transport Issues in the Determination of Planning Applications for Farm Diversification Proposals' (May 2002) for 'Farm Businesses' was used, as per paragraph 3.4. Therefore, a total of eight trips in total per day are assumed for this element of the site.

4.34. Therefore, a total daily vehicular trip generation of 16 vehicular trips in total has been assumed for Farm Site 8.

Comparison with Traffic Count Data

4.35. The daily traffic generation calculated using TRICS (16 in total) is lower than that counted during the survey period (29 in total); however, this may be due to a number of reasons such as farming activities taking place within the site that are unknown to AECOM, additional dwellings being present on the land that are unknown to AECOM, or an event taking place during the week of the survey. It is therefore recommended that the landowner is contacted to validate the traffic counts to determine whether the traffic flows counted during the survey reflect 'normal' levels, and to gain a better understanding of the activities that occur at this site. The landowner should be asked how the counted traffic flows compare to their busiest period, in order to determine what the 'worst-case' daily traffic flows are throughout the year.

5. Conclusion

5.1. The AECOM Transport Planning team have been asked to undertake a task to calculate the daily vehicular trip generation for eight farm sites located in the vicinity of the A40 to the east of Witney, Oxfordshire in association with the A40 dualling scheme. The farms currently take access either directly onto the A40, or onto roads that lead to the A40.

5.2. Traffic counts were taken at each of the farm site accesses for a period of seven days between 08th and 14th December 2020. These counts have been validated where possible using data held within the TRICS database. However, the data available within TRICS is very limited and it was not practicable in most cases to identify data that was directly equivalent to the farm sites in question. One result was a number of significant discrepancies between the observed traffic counts and the traffic flows derived from the TRICS data.

5.3. In addition, there is a very significant discrepancy between the observed and TRICS-based data in respect of site 1 (Hill Farm). The suspicion is that the compact grade-separated junction serving Hill Farm is being used by general traffic, for example drivers making U-turns as part of a trip between the A40 to the west of Witney and the eastern end of the town, because of the lack of an all-movements junction at the eastern end of the Witney bypass.

5.4. Taking the observed data and the data derived from TRICS together, Table 5 gives a summary of what is considered the best estimation of flows associated with each farm site.

Table 5: Farm Site Traffic Generation Estimation Summary

Farm Site	Name	Daily Traffic Estimation (all vehicles, two-way)	Daily HGV Traffic Estimation (two-way)
1	Hill Farm Livery Yard – all traffic	1100 - 1300	<10
1	Hill Farm Livery Yard – Farm Traffic Only	80 - 100	<10
2	Whitehouse Farm	10 - 20	<10
3	Salutation Farm	10 - 20	<10
4	Barnard Gate Farm	10 - 20	<10
5	Home Farm	30 - 90	<10
6	Ambury Close Farm	45 - 60	<10
7	Fir Tree Farm	100 - 120	<10
8	Chosley Farm	20 - 30	<10

5.5. Although the traffic count data collected gives an insight into likely traffic generation at each of the farm sites, it is acknowledged that the farm sites are likely to experience some and varying levels of seasonality, and that traffic generation at each site will vary throughout the year. Therefore, it is recommended that landowners, particularly of Farms Sites 1, 3, 4, 5, 6 and 8 where farming activities are understood to take place, are contacted in order to validate the traffic counts, and to determine from them how the counted levels of traffic compare to their busiest period, so that a seasonality factor can be applied to the counts and a worst-case scenario with regards to traffic generation can be calculated, if required.

APPENDIX A – TRAFFIC COUNT DATA DETAILED SUMMARY

	Traffic Count Ref	08/12/20 (Tuesday)									09/12/20 (Wednesday)								
		Arrivals			Departures			Total			Arrivals			Departures			Total		
		LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural
Farm Site 1	1a (access/ egress from/to EB A40)	591	6	0	35	0	0	626	6	0	614	5	0	25	2	0	639	7	0
	1b (access/ egress from/ to WB A40)	30	0	0	585	6	0	615	6	0	16	0	0	601	3	0	617	3	0
	Total	621	6	0	620	6	0	1241	12	0	630	5	0	626	5	0	1256	10	0
Farm Site 2	2	15	1	0	12	1	0	27	2	0	6	0	0	5	0	0	11	0	0
Farm Site 3	3	0	0	0	1	0	0	1	0	0	2	0	0	2	0	0	4	0	0
Farm Site 4	4	7	0	0	7	0	0	14	0	0	7	0	0	7	0	0	14	0	0
Farm Site 5	5	18	0	0	18	0	0	36	0	0	19	2	0	19	2	0	38	4	0
Farm Site 6	6	26	1	0	26	1	0	52	2	0	32	0	0	31	0	0	63	0	0
Farm Site 7	7	43	0	0	43	0	0	86	0	0	34	0	0	35	0	0	69	0	0
Farm Site 8	8	14	1	0	15	1	0	29	2	0	14	0	0	13	0	0	27	0	0

	Traffic Count Ref	10/12/20 (Thursday)									11/12/20 (Friday)								
		Arrivals			Departures			Total			Arrivals			Departures			Total		
		LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural
Farm Site 1	1a (access/ egress from/to EB A40)	593	3	0	34	1	0	627	4	0	686	5	0	22	0	0	708	5	0
	1b (access/ egress from/ to WB A40)	24	0	0	583	2	0	607	2	0	20	0	0	684	5	0	704	5	0
	Total	617	3	0	617	3	0	1234	6	0	706	5	0	706	5	0	1412	10	0
Farm Site 2	2	4	0	0	4	0	0	8	0	0	5	1	0	7	1	0	12	2	0
Farm Site 3	3	2	0	0	2	0	0	4	0	0	3	0	0	3	0	0	6	0	0
Farm Site 4	4	6	0	0	6	0	0	12	0	0	5	0	0	5	0	0	10	0	0
Farm Site 5	5	15	0	0	15	0	0	30	0	0	16	0	0	16	0	0	32	0	0
Farm Site 6	6	21	1	0	21	1	0	42	2	0	29	0	0	30	0	0	59	0	0
Farm Site 7	7	46	0	0	45	0	0	91	0	0	56	1	0	55	1	0	111	2	0
Farm Site 8	8	16	0	0	17	0	0	33	0	0	17	0	0	17	0	0	34	0	0

	Traffic Count Ref	12/12/20 (Saturday)									13/12/20 (Sunday)								
		Arrivals			Departures			Total			Arrivals			Departures			Total		
		LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural
Farm Site 1	1a (access/ egress from/to EB A40)	503	1	0	27	0	0	530	1	0	278	0	0	26	0	0	304	0	0
	1b (access/ egress from/ to WB A40)	24	0	0	499	1	0	523	1	0	20	0	0	272	0	0	292	0	0
	Total	527	1	0	526	1	0	1053	2	0	298	0	0	298	0	0	596	0	0
Farm Site 2	2	3	0	0	6	0	0	9	0	0	5	0	0	6	0	0	11	0	0
Farm Site 3	3	2	0	0	2	0	0	4	0	0	3	0	0	3	0	0	6	0	0
Farm Site 4	4	6	0	0	6	0	0	12	0	0	2	0	0	2	0	0	4	0	0
Farm Site 5	5	8	0	0	8	0	0	16	0	0	10	0	0	11	0	0	21	0	0
Farm Site 6	6	8	0	0	8	0	0	16	0	0	26	0	0	3	0	0	29	0	0
Farm Site 7	7	122	0	0	121	0	0	243	0	0	68	0	0	69	0	0	137	0	0
Farm Site 8	8	17	0	0	16	0	0	33	0	0	10	0	0	10	0	0	20	0	0

	Traffic Count Ref	14/12/20 (Monday)									7 day average				5 day average				
		Arrivals			Departures			Total			Total				Total				
		LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	LGV	HGV	Agricultural	Total	LGV	HGV	Agricultural	Total	TRICS calcs
Farm Site 1	1a (access/ egress from/to EB A40)	590	3	0	23	0	0	613	3	0	578	4	0		643	5	0		
	1b (access/ egress from/ to WB A40)	14	0	0	581	3	0	595	3	0	565	3	0		628	4	0		
	Total	604	3	0	604	3	0	1208	6	0	1143	7	0	1149	1270	9	0	1279	84
Farm Site 2	2	8	0	0	8	0	0	16	0	0	13	1	0	14	15	1	0	16	16
Farm Site 3	3	2	0	0	2	0	0	4	0	0	4	0	0	4	4	0	0	4	20
Farm Site 4	4	3	0	0	2	0	0	5	0	0	10	0	0	10	11	0	0	11	4
Farm Site 5	5	19	0	0	18	0	0	37	0	0	30	1	0	31	35	1	0	35	92
Farm Site 6	6	27	0	0	27	0	0	54	0	0	45	1	0	46	54	1	0	55	18
Farm Site 7	7	30	1	0	30	1	0	60	2	0	114	1	0	114	83	1	0	84	-
Farm Site 8	8	13	0	0	14	0	0	27	0	0	29	0	0	29	30	0	0	30	16

	Traffic Count Ref	7 day average							5 day average						
		Arrivals			Departures			Total two-way	Arrivals			Departures			Total two-way
		LV	HGV	Total	LV	HGV	Total		LV	HGV	Total	LV	HGV	Total	
Farm Site 1	1a (access/ egress from/to EB A40)	551	3	554	27	0	28	582	615	4	619	28	1	28	648
	1b (access/ egress from/ to WB A40)	21	0	21	544	3	546	568	21	0	21	607	4	611	631
	Total	572	3	575	571	3	574	1149	636	4	640	635	4	639	1279
Farm Site 2	2														
Farm Site 3	3														
Farm Site 4	4														
Farm Site 5	5														
Farm Site 6	6														
Farm Site 7	7														
Farm Site 8	8														

APPENDIX B – TRICS DATA

Site Reference:	SC-16-A-01 Multi-Modal Site
Created:	Version: 2010(a)v6.5.2 09/02/10
Latitude/Longitude:	51.28460, -0.33380
Land Use Type:	16 - MIXED/A - MISCELLANEOUS
Region/Area	SOUTH EAST/SURREY
Description:	TRAVELLERS SITE
Street:	YOUNG STREET
District:	FETCHAM
Town:	LEATHERHEAD
Post Code:	KT22 9BS
Planning Authority:	
Location:	Free Standing (PPS6 Out of Town)
Location Sub Category:	Out of Town
Use Class:	C3
Population within 500m:	41
Population within 1 Mile:	5,001 to 10,000
Population within 5 Miles:	125,001 to 250,000
Car ownership within 5 Miles:	2.1 to 2.5
Reason for blank public transport table:	No local PT
Is site associated with a travel plan:	No
If not, are there any plans to implement a Travel Plan in the future?	No
Is survey data available before the implementation of the Travel Plan?	
Is the location of the site hilly or flat:	Flat
Urban Regeneration:	No
No. of developments for this Site:	1
No. of survey Days for this Site:	1

Comments
This site is located just off Young Street on the southern outskirts of Leatherhead. Young Street runs south-west into Epsom Road towards Guildford, and east to the Leatherhead Bypass Road which connects to the M25.
The site is surrounded by fields.
The site has 1 access point.

Design features encouraging non-car modes

12. Pedestrians
None

13. Pedal cycles
None

14. Public transport
None

Design features encouraging non-car modes

Road Network Distance to Local Developments	
Year of Analysis	2010
Nearest Primary School	1.5 kilometres
Nearest Secondary School	2.4 kilometres
Nearest Local Shop/Corner Shop	0.7 kilometres
Nearest Main Supermarket	1.3 kilometres
Nearest Doctors Surgery	1.5 kilometres
Nearest Hospital with Minor Injuries/A & E	6.2 kilometres
Nearest Sports/Leisure Centre	1.3 kilometres

Census Data	
Year of Census	2001
Census Output Area/Data Zone	43UEGS0010
Number of people employed within Census Output Area	144
Number of households within Census Output Area	131
Number of people living within Census Output Area	363
Area of Census Output Area (hectares)	149.00
Population density within Census Output Area (per hectare)	2.44

Site reference:	SC-16-A-01	Multi-Modal survey site
Trade name:	SALVATION PLACE	
Site area (h/a):	0.56	
Open since	1984	
Total Employees		
Full Time Employees		
Part Time Employees		
Approximate % of total employees working standard 9-5 hours or similar	%	
Percentage Split of Employee Gender		
Male	%	
Female	%	
Name of nearest site	RIVER PLACE	
Distance to nearest similar site	4.0 Km	

OPENING TIMES (24 Hour format)

Mon to Thurs	00:00	to	24:00
Friday	00:00	to	24:00
Saturday	00:00	to	24:00
Sunday	00:00	to	24:00

Comments

There are 10 static caravans at this site and 2 permanent buildings.

Multi-Modal survey site

On-Site parking

Total no. of parking spaces	45

Number of spaces

Employee	0
Disabled	0
Visitor/Customer	45
OGV parking bays	0
Cycle racks	0
OGV loading bays	0
Mother & Toddler	0
Motorcycle spaces	0

Parking charges No

Comments about the management of the site car park, along with enforcement measures

No management or enforcement measures were observed during the survey.

Site parking surface or non-surface (multi-storey/underground)
Surface

General Comments on Parking

The number of parking spaces has been estimated using Google Earth as access to the parking could not be obtained. All spaces appear to be unmarked.
The off-street parking consists of a National Trust car park nearby.

Off-Site parking details

Is there off-site parking available
Yes

Off-Site parking included in the counts
Yes

Free On-Street parking available nearby
No

If prepared to pay, easy to find somewhere to park off-site all day
No

Parking restrictions

Area subject to parking restrictions (controlled parking zone - CPZ)
No

Off-Street parking

Off-Street parking available	Yes, Public Off-Street Parking is Available
Approx. available spaces	45

Parking located within a control parking zone (CPZ)
No

Charges for this Off-Street parking
No

Park & Ride

Park & Ride Type Facility providing relevant means of accessing the site
No

Site reference: SC-16-A-01 Survey date: 04/02/10 Day of week: Thursday
Multi-Modal survey site
Vehicles surveyed: Total vehicles
Survey type: Manual Count
AM weather: Cold and Light Rain
PM weather: Cold and Light Rain
Initial car park occupancy: Final car park occupancy:
BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE
Parking Capacity
Data proportions in %

Motor cars	67	Motor cycles	0	Public service	0
Light goods	25	OGV (1)	4	OGV (2)	0
				Taxis	4

Servicing Vehicles count recorded No

Time	Arr 46	Dep 46	Totals 92	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	3	5	8	(-2)
08:00-09:00	5	8	13	(-5)
09:00-10:00	3	3	6	(-5)
10:00-11:00	1	4	5	(-8)
11:00-12:00	7	6	13	(-7)
12:00-13:00	6	2	8	(-3)
13:00-14:00	6	4	10	(-1)
14:00-15:00	2	5	7	(-4)
15:00-16:00	6	5	11	(-3)
16:00-17:00	4	3	7	(-2)
17:00-18:00	3	1	4	(0)
18:00-19:00				
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

No PSV's, cycles, pedestrians or public transport users entered or exited the site during the survey.
It was not possible to obtain initial and final car park occupancy figures as access could not be gained to the on-site parking.

Site reference: SC-16-A-01 Survey date: 04/02/10 Day of week: Thursday
Multi-Modal survey site
Vehicles surveyed: OGV

Data proportions in % OGV (1) 100 OGV (2) 0

1 occupant per OGV is assumed, and included in the vehicle occupants count

Time	Arr 1	Dep 3	Totals 4	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	1	1	(-1)
09:00-10:00	0	0	0	(-1)
10:00-11:00	0	0	0	(-1)
11:00-12:00	0	1	1	(-2)
12:00-13:00	0	0	0	(-2)
13:00-14:00	0	0	0	(-2)
14:00-15:00	0	0	0	(-2)
15:00-16:00	1	1	2	(-2)
16:00-17:00	0	0	0	(-2)
17:00-18:00	0	0	0	(-2)
18:00-19:00				
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: SC-16-A-01 Survey date: 04/02/10 Day of week: Thursday
Multi-Modal survey site
Vehicles surveyed: Taxis

Time	Arr 2	Dep 2	Totals 4	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	0	0	0	(0)
08:00-09:00	0	0	0	(0)
09:00-10:00	0	0	0	(0)
10:00-11:00	0	0	0	(0)
11:00-12:00	0	0	0	(0)
12:00-13:00	0	0	0	(0)
13:00-14:00	1	1	2	(0)
14:00-15:00	0	0	0	(0)
15:00-16:00	1	1	2	(0)
16:00-17:00	0	0	0	(0)
17:00-18:00	0	0	0	(0)
18:00-19:00				
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: SC-16-A-01 Survey date: 04/02/10 Day of week: Thursday
Multi-Modal survey site
People Surveyed: Car/LGV/Motorcycle occupants

This count consists of car occupants, light goods vehicle occupants, motorcycle riders and OGV occupants
Taxi drivers and drivers of private vehicles picking up/dropping off passengers at the site are excluded from the count

Time	1	2	3	4	5	6	7	Arr 76	1	2	3	4	5	6	7	Dep 69	Totals 145	Accum
00:00-01:00																		
01:00-02:00																		
02:00-03:00																		
03:00-04:00																		
04:00-05:00																		
05:00-06:00																		
06:00-07:00																		
07:00-08:00	1	2	0	0	0	0	0	5	1	4	0	0	0	0	0	9	14	(-4)
08:00-09:00	3	1	0	1	0	0	0	9	3	2	2	0	1	0	0	18	27	(-13)
09:00-10:00	3	0	0	0	0	0	0	3	1	2	0	0	0	0	0	5	8	(-15)
10:00-11:00	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	4	5	(-18)
11:00-12:00	6	1	0	0	0	0	0	8	5	1	0	0	0	0	0	7	15	(-17)
12:00-13:00	4	1	1	0	0	0	0	9	1	1	0	0	0	0	0	3	12	(-11)
13:00-14:00	4	2	0	0	0	0	0	8	1	1	0	1	0	0	0	7	15	(-10)
14:00-15:00	1	0	0	1	0	0	0	5	5	0	0	0	0	0	0	5	10	(-10)
15:00-16:00	1	1	3	1	0	0	0	16	4	0	0	0	0	0	0	4	20	(2)
16:00-17:00	1	3	0	0	0	0	0	7	1	2	0	0	0	0	0	5	12	(4)
17:00-18:00	2	0	1	0	0	0	0	5	0	1	0	0	0	0	0	2	7	(7)
18:00-19:00																		
19:00-20:00																		
20:00-21:00																		
21:00-22:00																		
22:00-23:00																		
23:00-24:00																		

Site reference: SC-16-A-01 Survey date: 04/02/10 Day of week: Thursday
Multi-Modal survey site
People Surveyed: Total people

Time	Arr 76	Dep 69	Totals 145	Accumulation
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	5	9	14	(-4)
08:00-09:00	9	18	27	(-13)
09:00-10:00	3	5	8	(-15)
10:00-11:00	1	4	5	(-18)
11:00-12:00	8	7	15	(-17)
12:00-13:00	9	3	12	(-11)
13:00-14:00	8	7	15	(-10)
14:00-15:00	5	5	10	(-10)
15:00-16:00	16	4	20	(2)
16:00-17:00	7	5	12	(4)
17:00-18:00	5	2	7	(7)
18:00-19:00				
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site Reference:	WB-16-A-01
Latitude/Longitude:	51.36825, -1.42392
Land Use Type:	16 - MIXED/A - MISCELLANEOUS
Region/Area	SOUTH EAST/WEST BERKSHIRE
Description:	EGG FARM
Street:	
District:	
Town:	NEAR NEWBURY
Post Code:	
Planning Authority:	
Location:	Free Standing (PPS6 Out of Town)
Location Sub Category:	Out of Town
Use Class:	Not Known
Population within 500m:	
Population within 1 Mile:	1,000 or Less
Population within 5 Miles:	50,001 to 75,000
Car ownership within 5 Miles:	1.1 to 1.5
Buses/Trains per day (both directions):	<20 per day
Is site associated with a travel plan:	
Is the location of the site hilly or flat:	
Urban Regeneration:	
No. of developments for this Site:	1
No. of survey Days for this Site:	1

Comments

The population figures shown were from the 1991 Census.

Site reference:	WB-16-A-01
Trade name:	HAYWOOD GREEN LIMITED
Site area (h/a):	16.00
Open since	1991
Total Employees	2
Full Time Employees	
Part Time Employees	
Name of nearest site	
Distance to nearest similar site	10.0 Km

OPENING TIMES (24 Hour format)

Mon to Thurs	00:00	to	00:00
Friday	00:00	to	00:00
Saturday	00:00	to	00:00
Sunday	00:00	to	00:00

Total no. of parking spaces	0
Visitor/Customer spaces	0
Employee spaces	0
Disabled spaces	0
Cycle racks	0
OGV loading bays	0
OGV parking spaces	0
Mother & Toddler spaces	0
Parking charges	No
Surface parking	Yes
Off-Site parking available	No

Comments

Off-site parking details are not known.
This farm contains 8000 free range birds.
There is a poultry house and a mobile home on this site.
This farm does not sell eggs to the public, so there are no opening times.
There are 3 egg collections and 1 feed delivery at this farm per week.

Site reference: WB-16-A-01 Survey date: 14/12/93 Day of week: Tuesday

Survey type: Manual Count
AM weather:
PM weather:
Initial car park occupancy: 0 Final car park occupancy: 0
BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE
Parking Capacity
Data proportions in %

Motor cars	86	Motor cycles	0	Public service	0
Light goods	14	OGV (1)	0	OGV (2)	0

Servicing Vehicles count recorded No

Taxis are included as cars in this survey

Time	Arr 7	Dep 7	Totals 14	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	2	1	3	1
08:00-09:00	0	1	1	0
09:00-10:00	1	1	2	0
10:00-11:00	1	1	2	0
11:00-12:00	1	0	1	1
12:00-13:00	0	1	1	0
13:00-14:00	0	0	0	0
14:00-15:00	1	0	1	1
15:00-16:00	0	0	0	1
16:00-17:00	1	2	3	0
17:00-18:00	0	0	0	0
18:00-19:00	0	0	0	0
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Site reference: ES-16-C-03 Survey date: 09/07/02 Day of week: Tuesday

Survey type: Manual Count
AM weather: Mild and Heavy Rain
PM weather: Mild and Heavy Rain
Initial car park occupancy: 4 Final car park occupancy: 2
BRACKETED ACCUMULATION FIGURES ARE NOT ABSOLUTE
Parking Capacity 20% (20 On-Site Spaces)

Data proportions in %

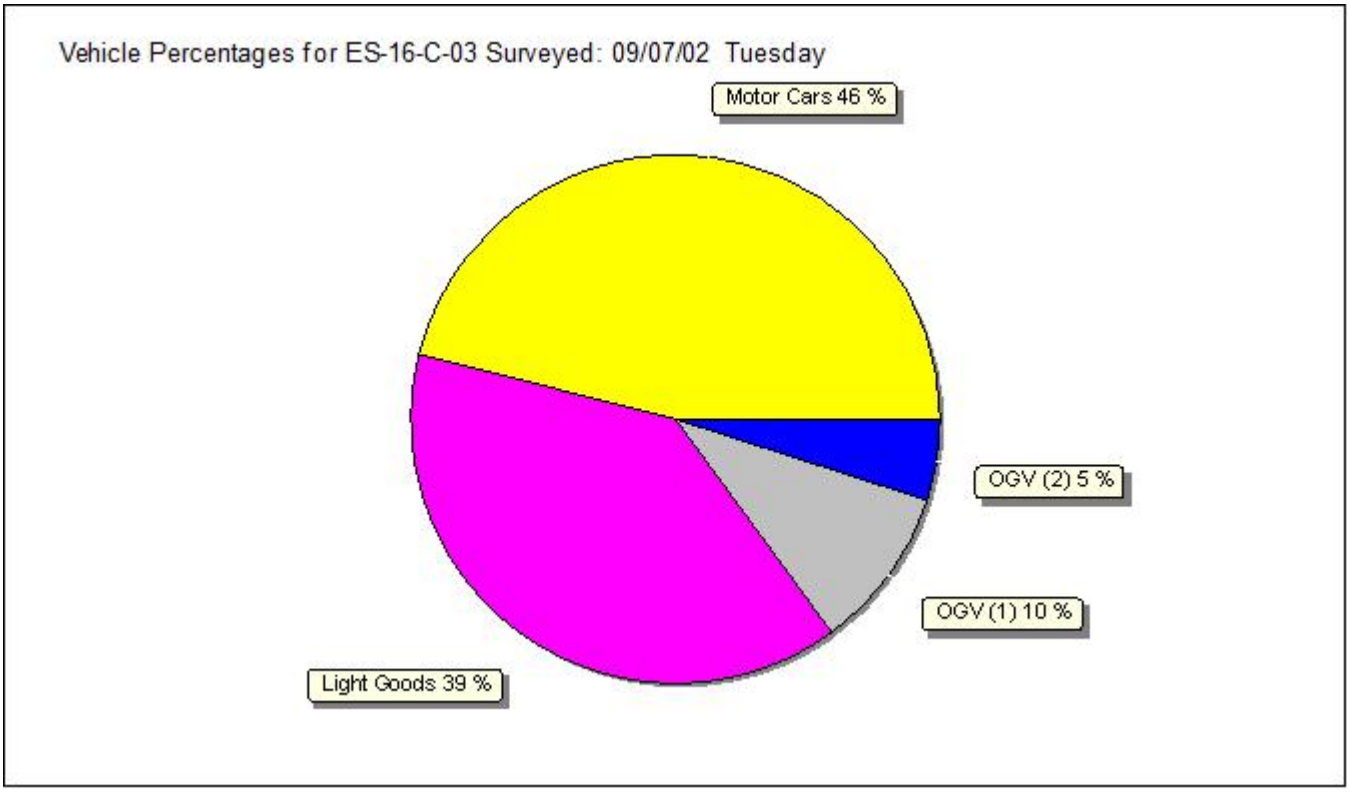
Motor cars	46	Motor cycles	0	Public service	0
Light goods	39	OGV (1)	10	OGV (2)	5
				Taxis	

Servicing Vehicles count recorded No

Time	Arr 35	Dep 37	Totals 72	Parking Accum
00:00-01:00				
01:00-02:00				
02:00-03:00				
03:00-04:00				
04:00-05:00				
05:00-06:00				
06:00-07:00				
07:00-08:00	1	3	4	2
08:00-09:00	2	3	5	1
09:00-10:00	3	2	5	2
10:00-11:00	2	1	3	3
11:00-12:00	2	4	6	1
12:00-13:00	5	6	11	0
13:00-14:00	2	1	3	1
14:00-15:00	7	6	13	2
15:00-16:00	4	2	6	4
16:00-17:00	1	4	5	1
17:00-18:00	5	5	10	1
18:00-19:00	1	0	1	2
19:00-20:00				
20:00-21:00				
21:00-22:00				
22:00-23:00				
23:00-24:00				

Comments

No PSV's or pedal cycles entered or exited the site during this survey.


Vehicle Percentages for ES-16-C-03 Surveyed: 09/07/02 Tuesday
Motor Cars 46 %
OGV (2) 5 %
OGV (1) 10 %
Light Goods 39 %

Appendix I – Future Proposed Development Driven Eynsham West Roundabout Assessment Technical Note

TECHNICAL NOTE: FUTURE PROPOSED DEVELOPMENT DRIVEN EYNSHAM WEST ROUNDABOUT ASSESSMENT

Client name OXFORDSHIRE COUNTY COUNCIL	**Discipline** HIGHWAYS	**Project name** A40 SMART CORRIDOR	**Date** 05/02/2021
Project number 60615257	**Prepared by** KINGSLEY NWANKWO	**Approved by** GORDON DAVIDSON	**Checked by** OSHOKHAYAME IGEBU

Revision History

Revision	Revision date	Details	Authorised	Name	Position
P01	05/02/2021	For Information	AS	Aldo Strydom	Project Manager

1. Introduction

1.1 AECOM has been commissioned by Oxfordshire County Council (OCC) to develop feasibility design for the A40 corridor with the scheme designated “The Smart Corridor (A40SC) Scheme”. The smart corridor scheme is made up of 3 separate elements which are;

- Element 1 – Dualling of 3.2km of the A40 between Witney and the B4449 Eynsham junction (the junction of the proposed Park and Ride)
- Element 2 – A westbound bus lane between the B4449 junction and Dukes Cut Bridge in the east – appx 7km
- Element 3 – Capacity and Connectivity improvements over the four structures at Dukes Cut (between Kingsbridge Brook and the A34 overbridges) to facilitate the extension of an eastbound bus lane over the bridges.

1.2 As part of the A40 dualling design development, a future proposed development driven Eynsham West junction is being considered to provide access to the development areas at Eynsham. **Figure 1** shows the location of the development areas at Eynsham.

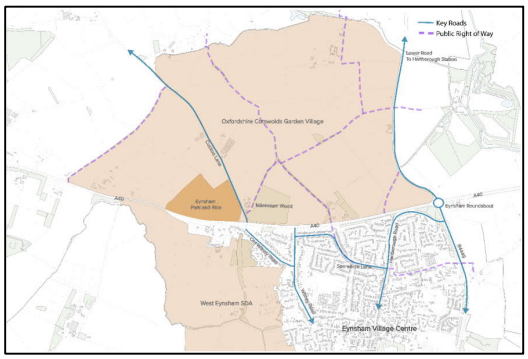


Figure 1 – Development Areas at Eynsham

Source: Non-motorised crossings of the A40 at Eynsham Report (OCC, 2020)

1.3 This technical note has been prepared to assess the viability of a south arm to the proposed West Eynsham Strategic Development Area (SDA) belonging to Berkeley, an additional north arm to a commercial facility, and the implications to the A40 dualling.

2. Future Proposed Development Driven Eynsham West Roundabout Scenarios

2.1 Background

2.1.1 Following the AECOM design of a three-arm roundabout to future proof access to Oxfordshire Cotswolds Garden Village (OCGV), OCC have instructed AECOM to carry out further assessment for the following:

- Scenario A – a four-arm roundabout with a north arm access to OCGV and a south arm access to West Eynsham SDA.
- Scenario B – a four-arm roundabout with two north arm accesses, to OCGV and a commercial facility.
- Scenario C – a five-arm roundabout with two north arm accesses (OCGV and a commercial facility) and a south arm access to West Eynsham SDA.

2.1.2 This assessment only considers geometric implications of the roundabout scenarios (see para. 1.3).

2.2 Scenario A – A Four-arm Roundabout with a North Arm Access to OGV and a South Arm Access to West Eynsham SDA

2.2.1 The junction layout and design parameters of Scenario A are shown in Drg. No. DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0103, included in Appendix A.

2.2.2 The following comments applies to Scenario A:

- No implication on the proposed geometry of the dualling alignments.
- No further deviation of the proposed northern arm access to OCGV development.
- No implication on the roundabout inscribed circumference diameter (ICD).
- Further landtake as a result of the proposed south arm.
- The south arm impacts on the existing flood plain.
- An existing intermediate pressure gas main is affected due to the south arm.

2.3 Scenario B – A Four-arm Roundabout with two North Arm Accesses to OCGV and a Commercial Facility

2.3.1 The junction layout and design parameters of Scenario B are shown in Drg. No. DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0104, included in Appendix A.

2.3.2 The following comments applies to Scenario B:

- Larger roundabout ICD to accommodate a northeast access to a commercial facility.
- Further deviation of the north arm access to OCGV development due to an additional arm for access to the commercial facility.
- Additional landtake required within OCGV land.
- Due to the proximity of both northern arms, there may be modelling and safety implications.

2.4 Scenario C – A Five-Arm Roundabout with two North Arm Accesses (to OCGV and a Commercial Facility) and a South Arm Access to West Eynsham SDA

2.4.1 The junction layout and design parameters of Scenario C is shown in Drg. No. DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0105, included in Appendix A.

2.4.2 The following comments applies to Scenario C:

- The south arm impacts on the existing flood plain.
- An existing intermediate pressure gas main is affected due to the south arm.
- Larger roundabout ICD to accommodate a northeast access to a commercial facility.
- Further deviation of the north arm access to OCGV development due to an additional arm for access to the commercial facility.
- Additional landtake required within OCGV and West Eynsham SDA land.
- Due to the proximity of both northern arms, there may be modelling and safety implications.

3. Summary

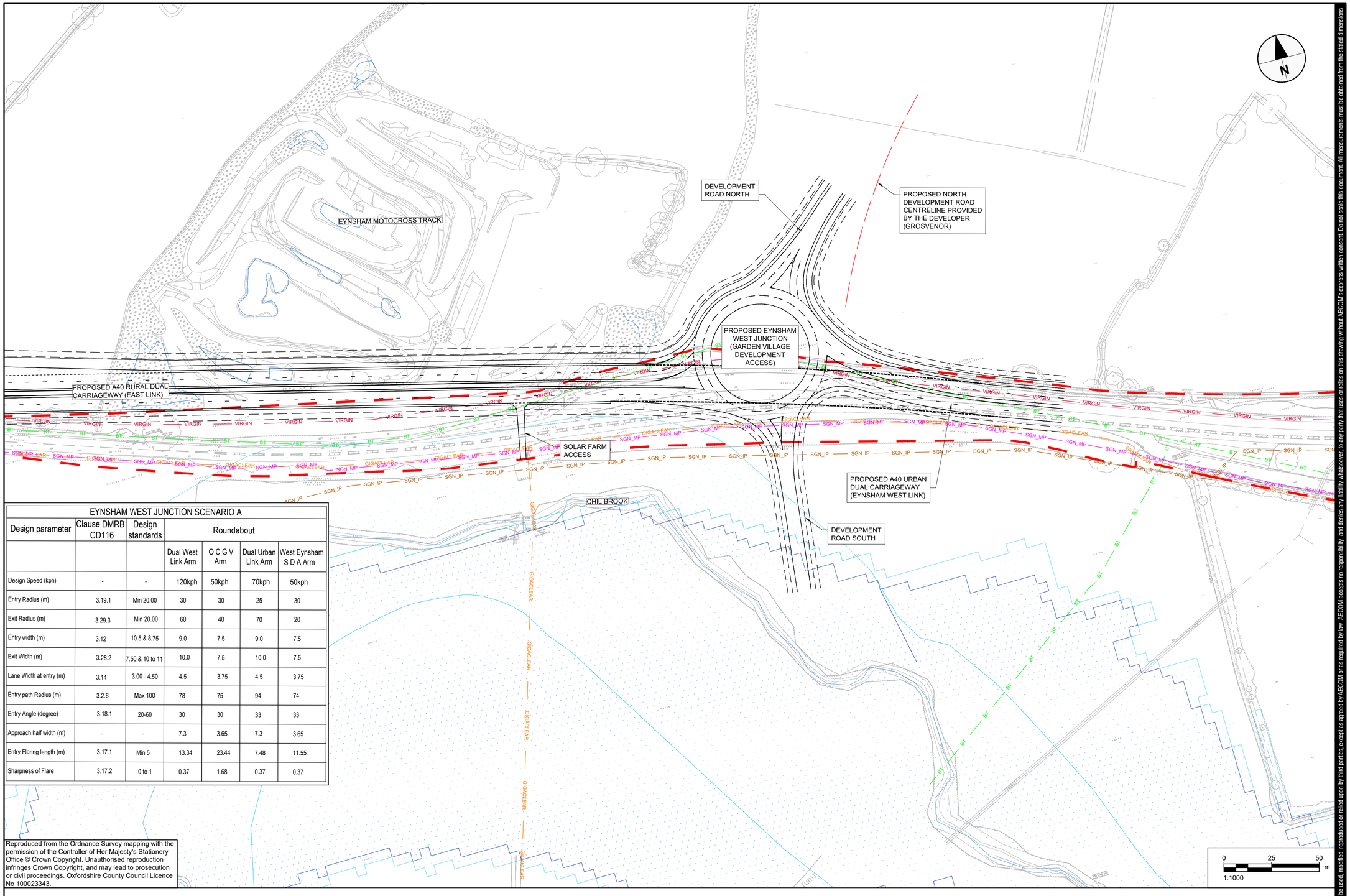
3.1 Some key issues with the roundabout scenarios include:

- Intermediate pressure gas main and existing flood plain affected due to the southern arm associated with scenarios A and C.
- Further landtake required for all roundabout scenarios.

APPENDIX A

Drawings:

I. Dual Eynsham West Junction Scenario A – Drawing No: DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0103
II. Dual Eynsham West Junction Scenario B – Drawing No: DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0104
III. Dual Eynsham West Junction Scenario C – Drawing No: DUAL-ACM-HGN-E1_ZZ_ZZ_ZZ DR CH 0105



EYNSHAM WEST JUNCTION SCENARIO A						
Design parameter	Clause DMRB CD116	Design standards	Roundabout			
			Dual West Link Arm	O C G V Arm	Dual Urban Link Arm	West Eynsham S D A Arm
Design Speed (kph)	-	-	120kph	50kph	70kph	50kph
Entry Radius (m)	3.19.1	Min 20.00	30	30	25	30
Exit Radius (m)	3.29.3	Min 20.00	60	40	70	20
Entry width (m)	3.12	10.5 & 8.75	9.0	7.5	9.0	7.5
Exit Width (m)	3.28.2	7.50 & 10 to 11	10.0	7.5	10.0	7.5
Lane Width at entry (m)	3.14	3.00 - 4.50	4.5	3.75	4.5	3.75
Entry path Radius (m)	3.2.6	Max 100	78	75	94	74
Entry Angle (degree)	3.18.1	20-60	30	30	33	33
Approach half width (m)	-	-	7.3	3.65	7.3	3.65
Entry Flaring length (m)	3.17.1	Min 5	13.34	23.44	7.48	11.55
Sharpness of Flare	3.17.2	0 to 1	0.37	1.68	0.37	0.37

KEY

- HIGHWAY BOUNDARY
- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SGN INTERMEDIATE PRESSURE
- SGN MEDIUM PRESSURE
- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

AECOM

PROJECT

A40 SMART CORRIDOR

PROJECT NUMBER

60615257

CLIENT

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NOTES

ISSUE/REVISION

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KEY PLAN

SHEET TITLE

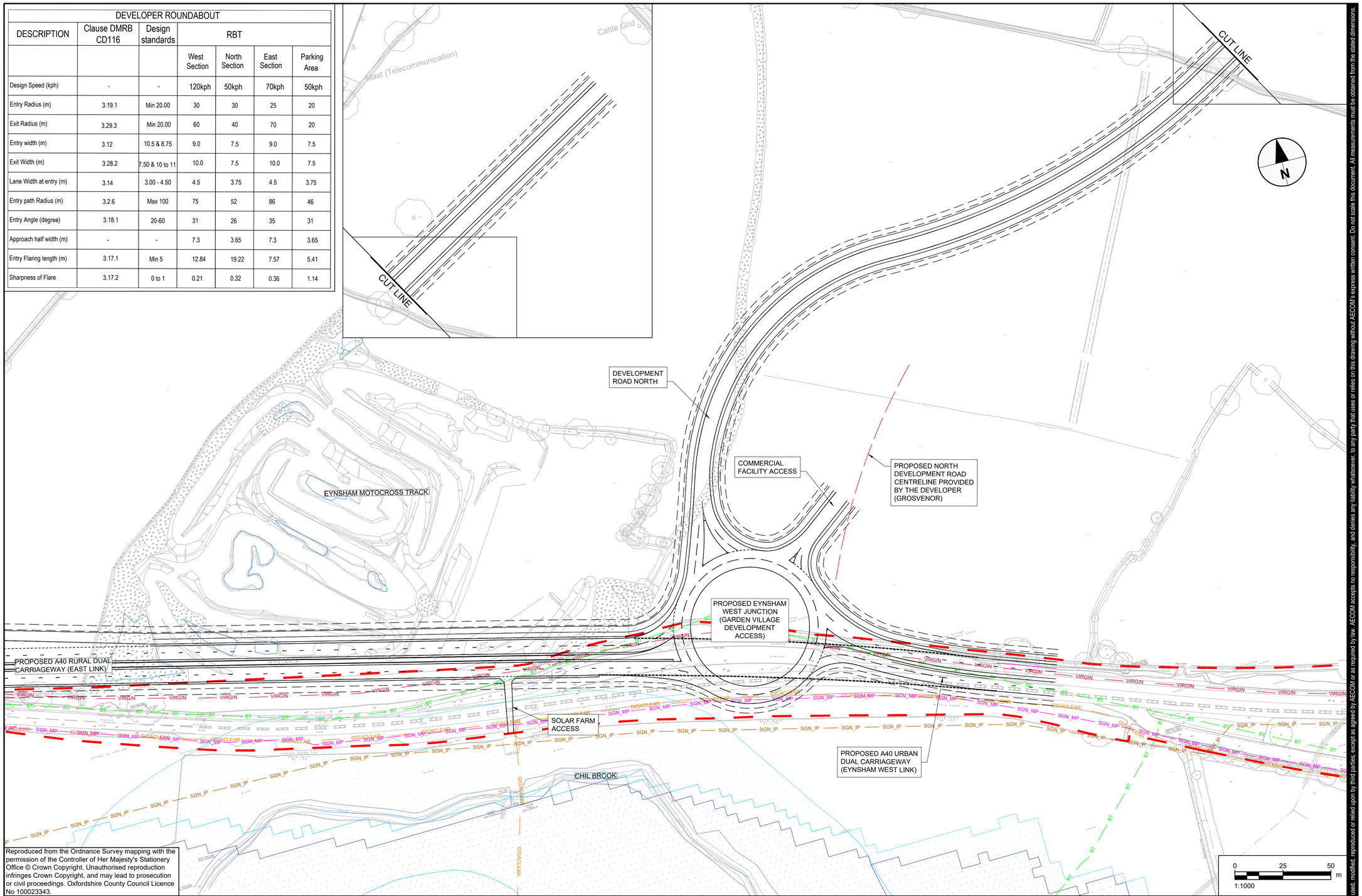
DUAL
EYNSHAM WEST JUNCTION
SCENARIO A

SHEET NUMBER

Project Number	Originator	Volume	Revision
DUAL	- ACM -	HGN	P01
E1_ZZ_ZZ_ZZ	-DR -CH-	0103	
Location	Type	Role Number	

Project Management Initials: Designer:KN Checked:OI Approved: AS ISO A1 594mm x 841mm

DEVELOPER ROUNDABOUT						
DESCRIPTION	Clause DMRB CD116	Design standards	RBT			
			West Section	North Section	East Section	Parking Area
Design Speed (kph)	-	-	120kph	50kph	70kph	50kph
Entry Radius (m)	3.19.1	Min 20.00	30	30	25	20
Exit Radius (m)	3.29.3	Min 20.00	60	40	70	20
Entry width (m)	3.12	10.5 & 8.75	9.0	7.5	9.0	7.5
Exit Width (m)	3.28.2	7.50 & 10 to 11	10.0	7.5	10.0	7.5
Lane Width at entry (m)	3.14	3.00 - 4.50	4.5	3.75	4.5	3.75
Entry path Radius (m)	3.2.6	Max 100	75	52	86	46
Entry Angle (degree)	3.18.1	20-60	31	26	35	31
Approach half width (m)	-	-	7.3	3.65	7.3	3.65
Entry Flaring length (m)	3.17.1	Min 5	12.84	19.22	7.57	5.41
Sharpness of Flare	3.17.2	0 to 1	0.21	0.32	0.36	1.14



KEY

- HIGHWAY BOUNDARY
- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SGN INTERMEDIATE PRESSURE
- SGN MEDIUM PRESSURE
- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

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KEY PLAN

SHEET TITLE

DUAL
EYNSHAM WEST JUNCTION
SCENARIO B

SHEET NUMBER

Project Number	Originator	Volume		Revision
DUAL	ACM	HGN		P01
E1_ZZ_ZZ_ZZ	DR	CH	0104	
Location		Type	Role Number	

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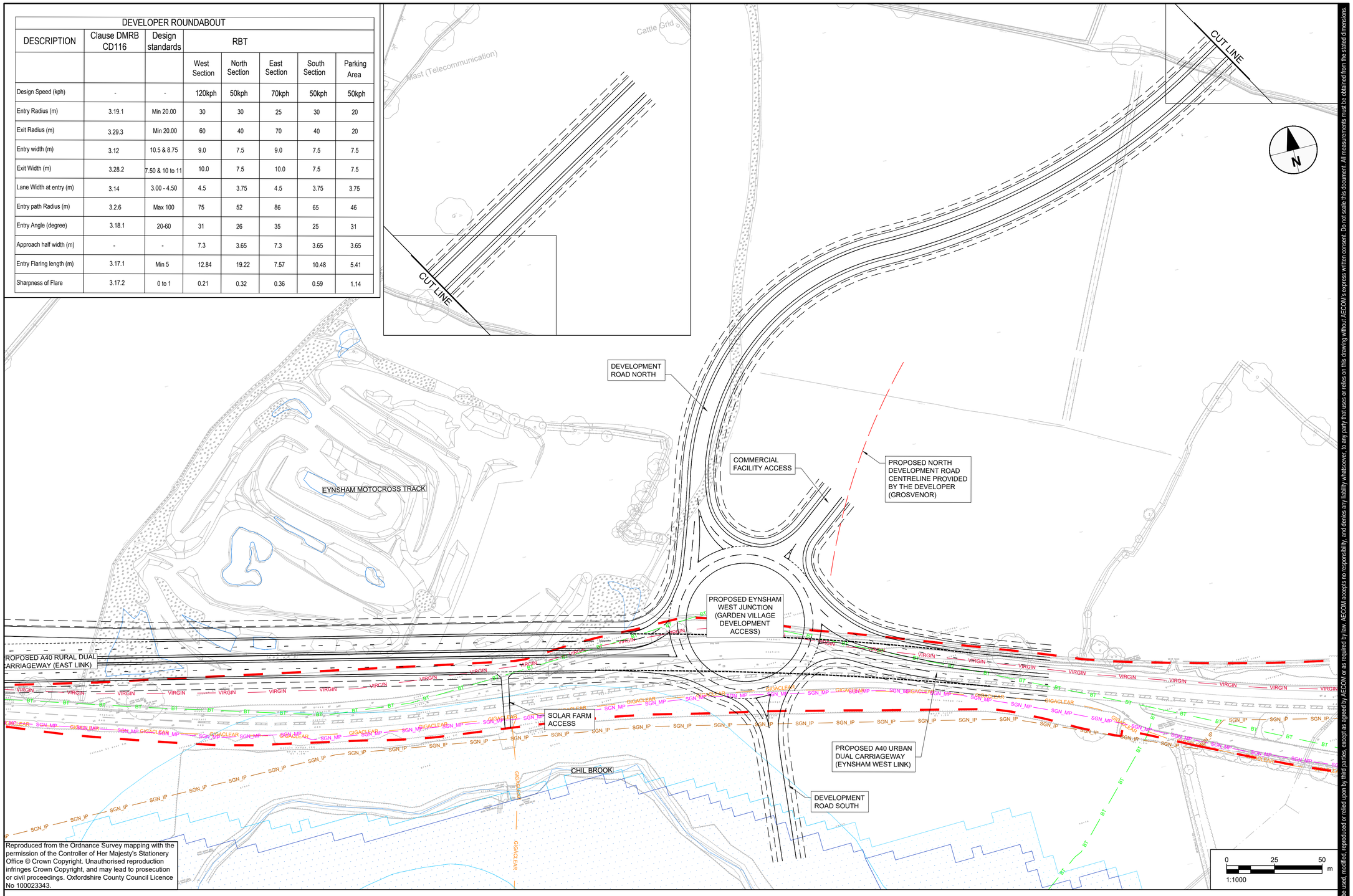
Project Management Initials: Designer:KN Checked:OI Approved: AS ISO A1 594mm x 841mm

DEVELOPER ROUNDABOUT							
DESCRIPTION	Clause DMRB CD116	Design standards	RBT				
			West Section	North Section	East Section	South Section	Parking Area
Design Speed (kph)	-	-	120kph	50kph	70kph	50kph	50kph
Entry Radius (m)	3.19.1	Min 20.00	30	30	25	30	20
Exit Radius (m)	3.29.3	Min 20.00	60	40	70	40	20
Entry width (m)	3.12	10.5 & 8.75	9.0	7.5	9.0	7.5	7.5
Exit Width (m)	3.28.2	7.50 & 10 to 11	10.0	7.5	10.0	7.5	7.5
Lane Width at entry (m)	3.14	3.00 - 4.50	4.5	3.75	4.5	3.75	3.75
Entry path Radius (m)	3.2.6	Max 100	75	52	86	65	46
Entry Angle (degree)	3.18.1	20-60	31	26	35	25	31
Approach half width (m)	-	-	7.3	3.65	7.3	3.65	3.65
Entry Flaring length (m)	3.17.1	Min 5	12.84	19.22	7.57	10.48	5.41
Sharpness of Flare	3.17.2	0 to 1	0.21	0.32	0.36	0.59	1.14



KEY

- HIGHWAY BOUNDARY
- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
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- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

AECOM

PROJECT

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P01	05/02/21	Issued For Information
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KEY PLAN

SHEET TITLE

DUAL
EYNSHAM WEST JUNCTION
SCENARIO C

SHEET NUMBER

Project Number	Originator	Volume		Revision
DUAL	- ACM	- HGN		P01
E1_ZZ_ZZ_ZZ	-DR	-CH	-0105	
Location	Type	Role	Number	

05 February 2021 17:36:12
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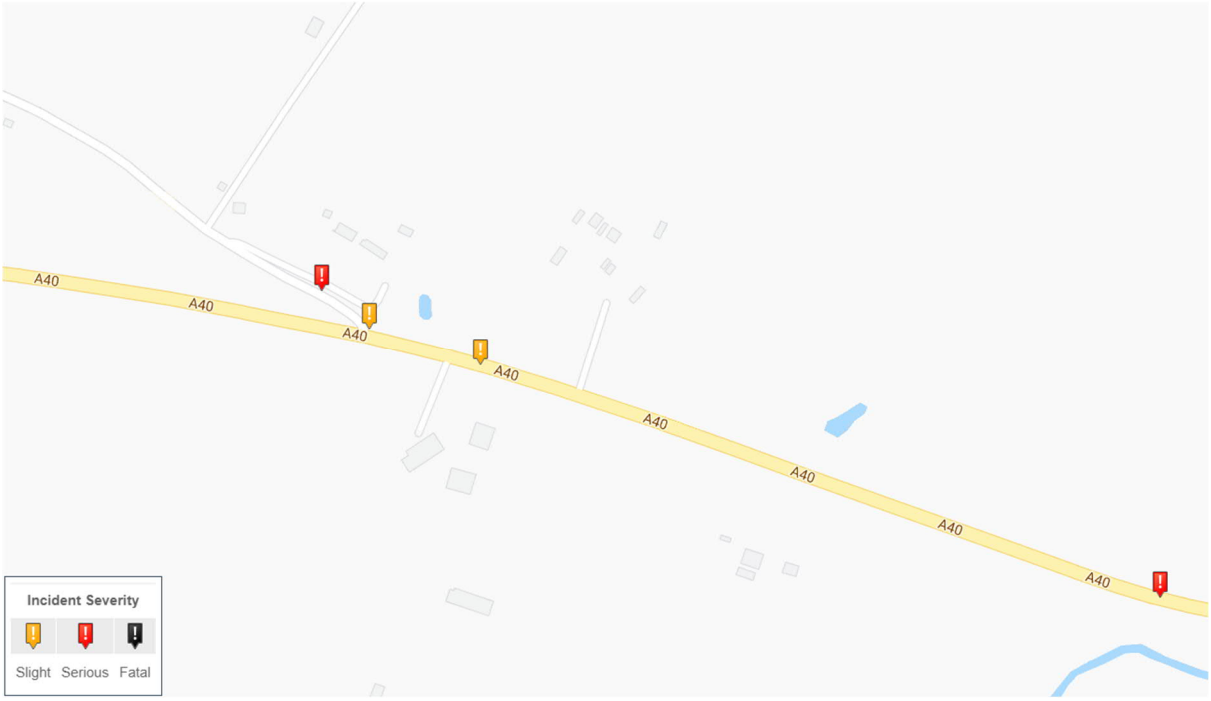
Appendix J – Collision Maps for Accesses

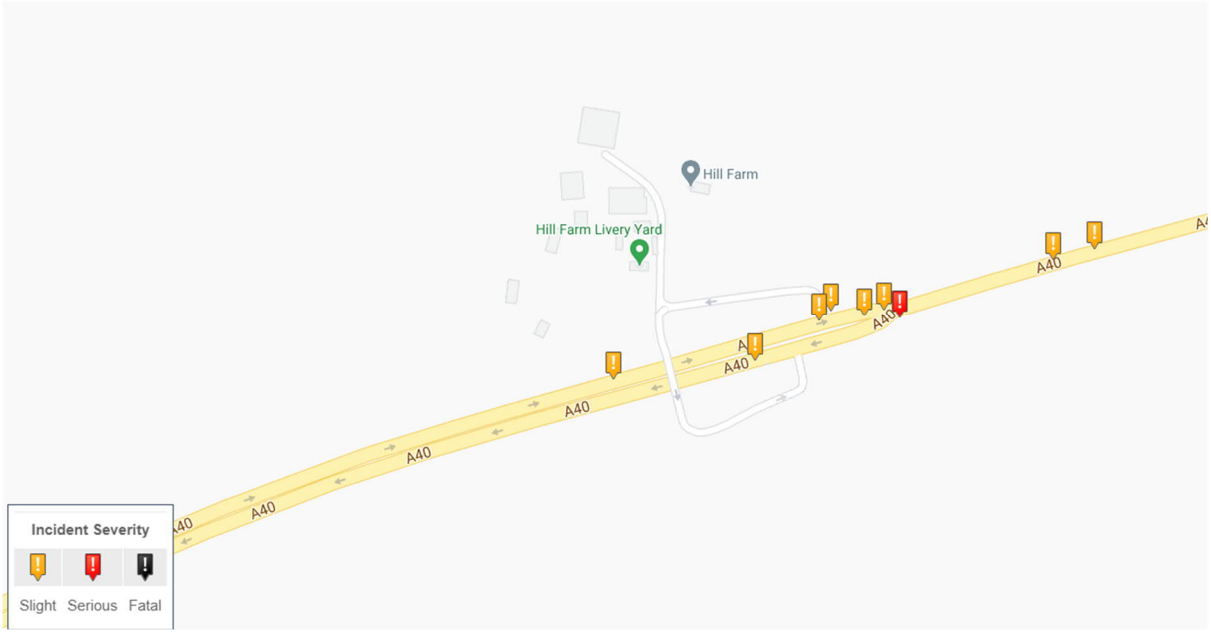
This Appendix shows the maps produced to assess the recent collision record for certain Accesses along the A40 Dualling. The Accesses considered are:

- Ambury Close Farm;
- Fir Tree Farm;
- Barnard Gate Farm; and
- Hill Farm.



Collisions in the area of Ambury Close Farm, Fir Tree Farm and Barnard Gate Farm Accesses over the period 2016-2020

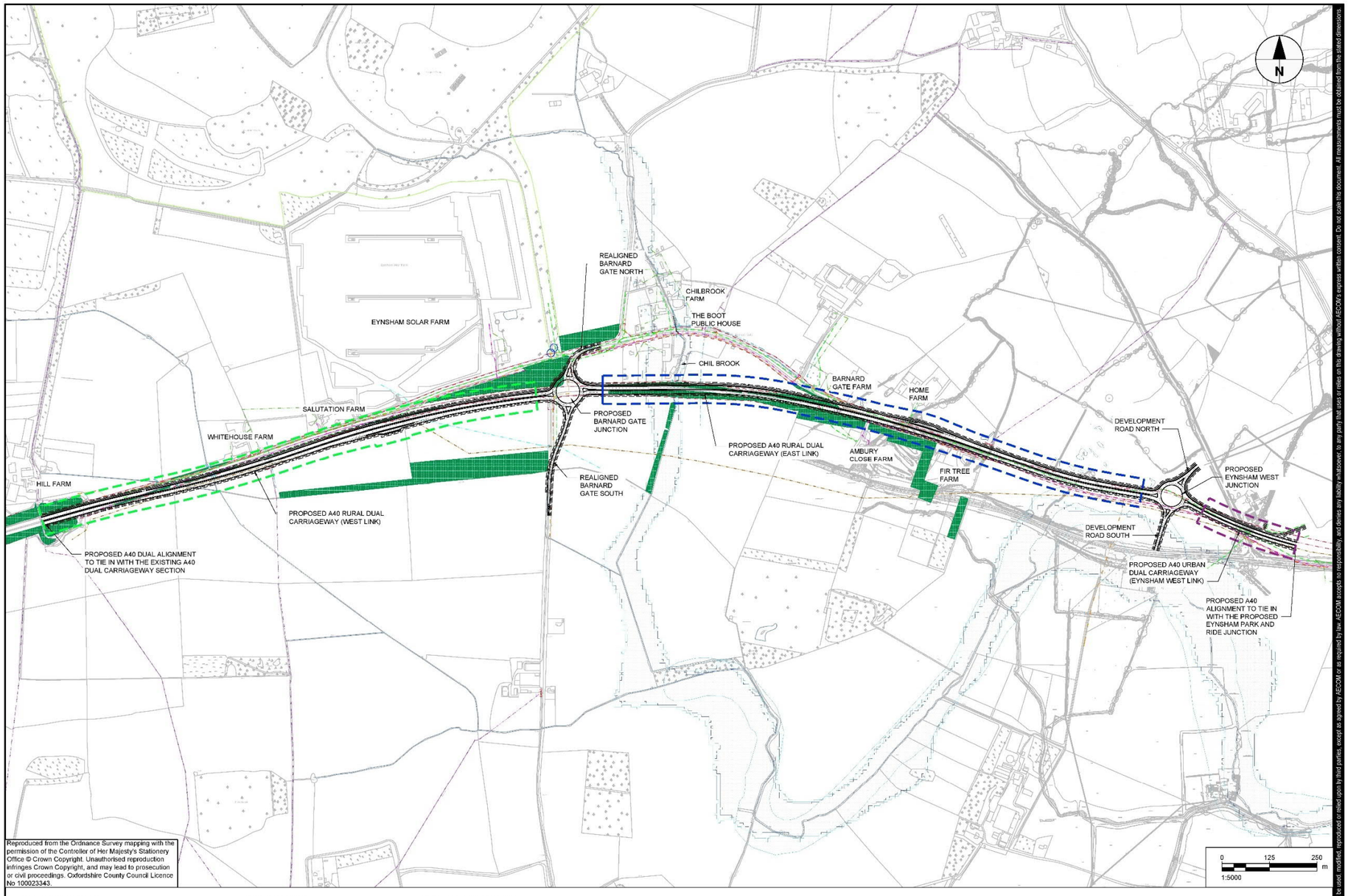
Source: Export from https://www.crashmap.co.uk/Search



Collisions in the area of Hill Farm Access over the period 2016-2020

Source: Export from https://www.crashmap.co.uk/Search

Appendix K – Road Alignment Option Maps



KEY - CONSTRAINTS

- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3
- EXISTING WATER BODY / BROOK
- EXISTING CULVERT
- EXISTING LISTED CONSERVATION AREA
- EXISTING LISTED BUILDING AND SITES
- EXISTING PRIVATE ACCESS DRIVES
- EXISTING VEGETATION
- EXISTING FIELD ACCESS
- EXISTING HIGHWAY BOUNDARY
- EXISTING PUBLIC RIGHT OF WAY AND REFERENCE - FOOTWAY
- WORK IN PROGRESS RED LINE BOUNDARY

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SGN INTERMEDIATE PRESSURE
- SGN MEDIUM PRESSURE
- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

KEY - DESIGN EXTENTS

- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (WEST LINK)
- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (EAST LINK)
- EXTENTS OF A40 URBAN DUAL CARRIAGEWAY (EYNSHAM WEST LINK)

KEY - GENERAL

- PROPOSED ATTENUATION POND

SN	GENERAL COMMENTS
1	THE PROPOSED DUAL ALIGNMENT GEOMETRY IS COMPLIANT WITH THE REQUIREMENT OF THE DMRB CD 109, HOWEVER THE HORIZONTAL CURVES FOR THE EAST LINK ALIGNMENT WILL REQUIRE 5% SUPERELEVATION LEADING TO A NEED FOR DRAINAGE ALONG THE CENTRAL RESERVE, WIDENING OF THE CENTRAL RESERVE AND VERGE FOR VISIBILITY THROUGH THE SECTION OF THE SUPERELEVATED CARRIAGEWAY.
2	THE INSCRIBED CIRCLE DIAMETER (ICD) FOR BARNARD GATE JUNCTION AND DEVELOPER JUNCTION ARE 80m AND 75m RESPECTIVELY.
3	SIGNIFICANT IMPACT ON VEGETATION ALONG THE EXISTING A40 AND AT THE BARNARD GATE JUNCTION.
4	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR NMU FACILITIES PROVISION.
5	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR LAY-BY FACILITIES PROVISION.
6	MODERATE LAND TAKE REQUIRED DUE TO THE WEST RURAL DUAL ALIGNMENT POSITIONED SOUTH OF THE EXISTING A40.
7	ALTERNATIVE ACCESSES WILL NEED TO BE PROVIDED FOR ALL EXISTING PROPERTIES AND FIELDS CURRENTLY ACCESSING THE EXISTING A40 DIRECTLY.
8	EAST ALIGNMENT IMPACTS FLOOD PLAIN IMMEDIATELY EAST OF THE PROPOSED BARNARD GATE JUNCTION, HOWEVER FLOOD PLAIN TO THE WEST OF THE DEVELOPER ROUNDABOUT IS NOT IMPACTED AS THE SECTION OF EAST ALIGNMENT GOING THROUGH THIS SECTION IS PUSHED NORTH OF THE EXISTING A40.
9	BUILDABILITY - MINIMAL ISSUES BETWEEN CONSTRUCTION AND MAINTAINING TRAFFIC FLOW FOR THE RURAL LINKS, HOWEVER THERE IS POSSIBILITY OF SIGNIFICANT ISSUE IN TRAFFIC MANAGEMENT FOR THE URBAN LINK DURING CONSTRUCTION.

Project Management Initials: | Designer: KN | Checked: OI | Approved: AS | ISO A1 594mm x 841mm

20 December 2020 10:40:07
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PROJECT

A40 SMART CORRIDOR

PROJECT NUMBER

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NOTES

1. THIS IS AN OVERVIEW OF DUAL OPTION 1 ALIGNMENT AND SHOULD BE READ IN CONJUNCTION WITH DUAL OPTION 1 DRAWING SHEETS, WHICH SHOWS DETAILED ASSESSMENT OF THIS OPTION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P01	11/12/20	For Approval
P02	19/12/20	FOR INFORMATION

KEY PLAN

SHEET TITLE

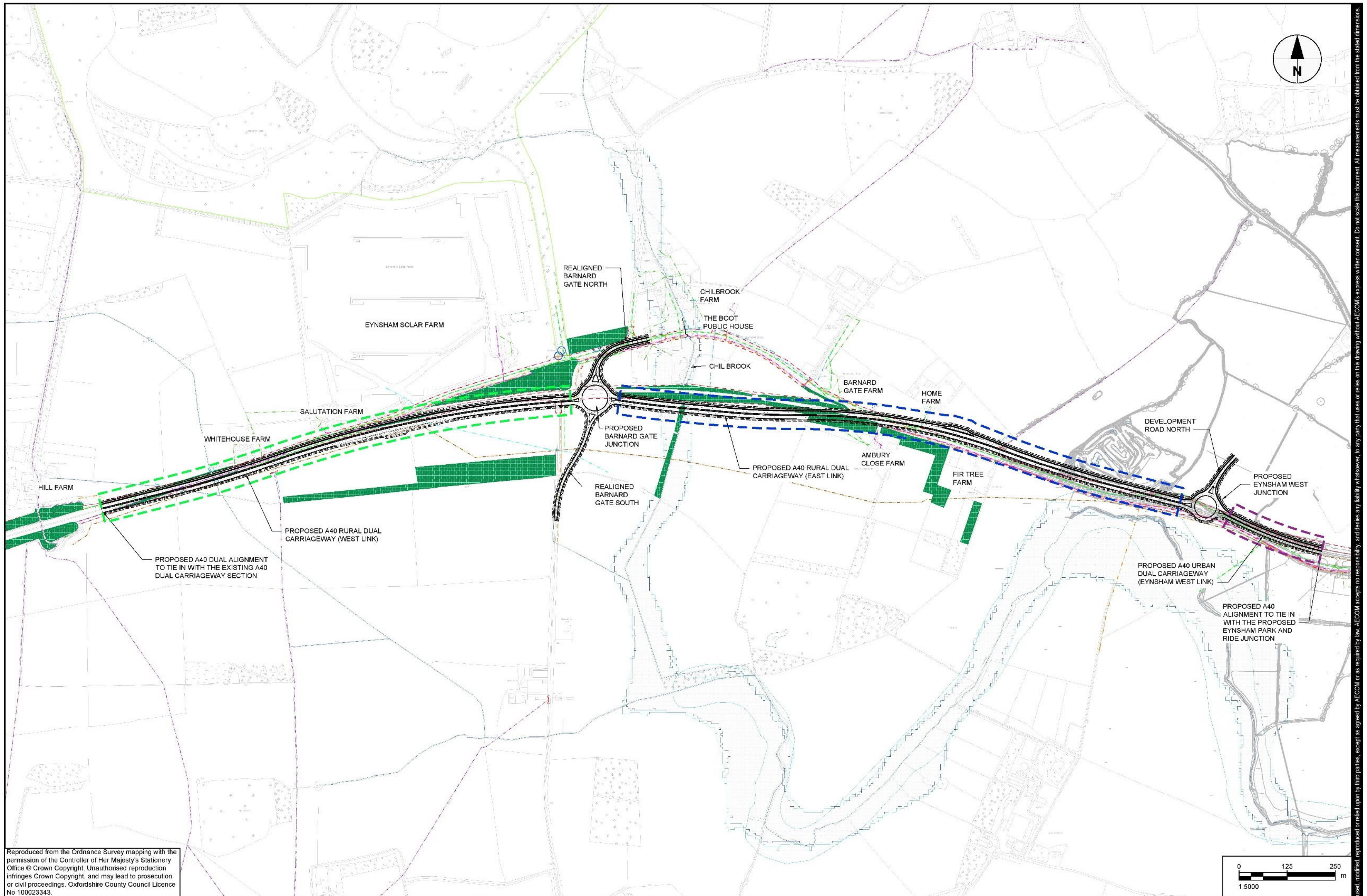
DUAL OPTION 1 OVERVIEW

SHEET NUMBER

Project Number - Originator - Volume - Location - Type - Role - Number
DUAL - ACM - HGN - E1_ZZ_ZZ_ZZ - DR - CH - 0060

Revision: P02

Figure 9-2 Road Alignment Option 1



KEY - CONSTRAINTS

- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3
- EXISTING WATER BODY / BROOK
- EXISTING CULVERT
- EXISTING LISTED CONSERVATION AREA
- EXISTING LISTED BUILDING AND SITES
- EXISTING PRIVATE ACCESS DRIVES
- EXISTING VEGETATION
- EXISTING FIELD ACCESS
- EXISTING HIGHWAY BOUNDARY
- EXISTING PUBLIC RIGHT OF WAY AND REFERENCE - FOOTWAY
- WORK IN PROGRESS RED LINE BOUNDARY

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SGN INTERMEDIATE PRESSURE
- SGN MEDIUM PRESSURE
- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

KEY - DESIGN EXTENTS

- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (WEST LINK)
- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (EAST LINK)
- EXTENTS OF A40 URBAN DUAL CARRIAGEWAY (EYNSHAM WEST LINK)

KEY - GENERAL

- PROPOSED ATTENUATION POND

SN	GENERAL COMMENTS
1	THE PROPOSED DUAL ALIGNMENT GEOMETRY IS COMPLIANT WITH THE REQUIREMENT OF THE DMRB CD 109, HOWEVER THE HORIZONTAL CURVES FOR THE EAST LINK ALIGNMENT WILL REQUIRE 3.5% SUPERELEVATION LEADING TO A NEED FOR DRAINAGE ALONG THE CENTRAL RESERVE, WIDENING OF THE CENTRAL RESERVE AND VERGE FOR VISIBILITY THROUGH THE SECTION OF THE SUPERELEVATED CARRIAGEWAY.
2	THE INSCRIBED CIRCLE DIAMETER (ICD) FOR BARNARD GATE JUNCTION AND DEVELOPER JUNCTION ARE 85m AND 75m RESPECTIVELY.
3	MINIMAL IMPACT ON VEGETATION ALONG THE EXISTING A40.
4	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR NMU FACILITIES PROVISION.
5	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR LAY-BY FACILITIES PROVISION.
6	MODERATE LAND TAKE REQUIRED DUE TO THE EAST RURAL DUAL ALIGNMENT PUSHED NORTH AND SOUTH OF THE EXISTING A40.
7	ALTERNATIVE ACCESSES WILL NEED TO BE PROVIDED FOR ALL EXISTING PROPERTIES AND FIELDS CURRENTLY ACCESSING THE EXISTING A40 DIRECTLY.
8	EAST ALIGNMENT IMPACTS FLOOD PLAIN IMMEDIATELY EAST OF THE PROPOSED BARNARD GATE JUNCTION, HOWEVER FLOOD PLAIN TO THE WEST OF THE DEVELOPER ROUNDABOUT IS NOT IMPACTED AS THE SECTION OF EAST ALIGNMENT GOING THROUGH THIS SECTION IS PUSHED NORTH OF THE EXISTING A40.
9	BUILDABILITY - MINIMAL ISSUES BETWEEN CONSTRUCTION AND MAINTAINING TRAFFIC FLOW FOR THE RURAL LINKS, HOWEVER THERE IS POSSIBILITY OF SIGNIFICANT ISSUE IN TRAFFIC MANAGEMENT FOR THE URBAN LINK DURING CONSTRUCTION.

AECOM

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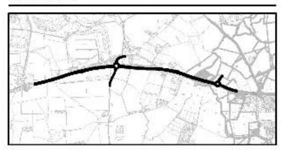
NOTES

1. THIS IS AN OVERVIEW OF DUAL OPTION 2 ALIGNMENT AND SHOULD BE READ IN CONJUNCTION WITH DUAL OPTION 2 DRAWING SHEETS, WHICH SHOWS DETAILED ASSESSMENT OF THIS OPTION

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P01	11/12/20	For Approval
P02	19/12/20	FOR INFORMATION

KEY PLAN



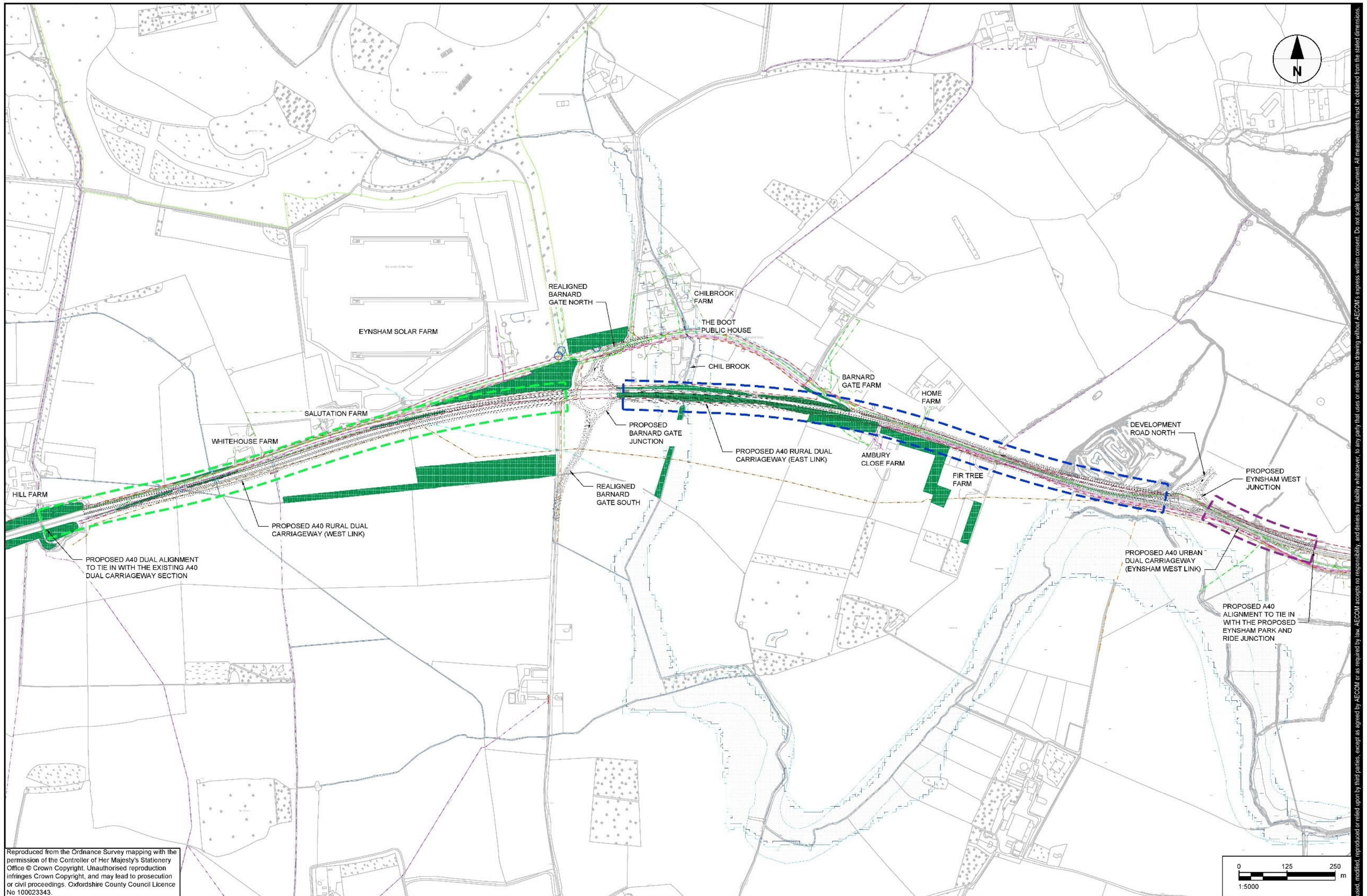
SHEET TITLE

DUAL
OPTION 2 OVERVIEW

SHEET NUMBER

Project Number | Originator | Volume	Revision
DUAL - ACM - HGN	P02
E1_ZZ_ZZ_ZZ -DR -CH -0061	
Location | Type | Role | Number	

Figure 9-3 Road Alignment Option 2



Project Management Initials: Designer:KN Checked:OI Approved:AS ISO A1 594mm x 841mm

KEY - CONSTRAINTS

- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3
- EXISTING WATER BODY / BROOK
- EXISTING CULVERT
- EXISTING LISTED CONSERVATION AREA
- EXISTING LISTED BUILDING AND SITES
- EXISTING PRIVATE ACCESS DRIVES
- EXISTING VEGETATION
- EXISTING FIELD ACCESS
- EXISTING HIGHWAY BOUNDARY
- EXISTING PUBLIC RIGHT OF WAY AND REFERENCE - FOOTWAY
- WORK IN PROGRESS RED LINE BOUNDARY

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SGN INTERMEDIATE PRESSURE
- SGN MEDIUM PRESSURE
- SGN LOW PRESSURE
- SSE LOW VOLTAGE
- VIRGIN MEDIA

KEY - DESIGN EXTENTS

- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (WEST LINK)
- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (EAST LINK)
- EXTENTS OF A40 URBAN DUAL CARRIAGEWAY (EYNSHAM WEST LINK)

KEY - GENERAL

- PROPOSED ATTENUATION POND

SN	GENERAL COMMENTS
1	THE PROPOSED DUAL ALIGNMENT GEOMETRY IS COMPLIANT WITH THE REQUIREMENT OF THE DMRB CD 109, HOWEVER THE HORIZONTAL CURVES FOR THE EAST LINK ALIGNMENT WILL REQUIRE 2.5% SUPERELEVATION LEADING TO A NEED FOR DRAINAGE ALONG THE CENTRAL RESERVE, WIDENING OF THE CENTRAL RESERVE AND VERGE FOR VISIBILITY THROUGH THE SECTION OF THE SUPERELEVATED CARRIAGEWAY.
2	THE INSCRIBED CIRCLE DIAMETER (ICD) FOR BARNARD GATE JUNCTION AND DEVELOPER JUNCTION ARE 95m AND 70m RESPECTIVELY.
3	MINIMAL IMPACT ON VEGETATION ALONG THE EXISTING A40.
4	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR NMU FACILITIES PROVISION.
5	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR LAY-BY FACILITIES PROVISION.
6	SIGNIFICANT LAND TAKE REQUIRED DUE TO THE WEST RURAL DUAL ALIGNMENT PUSHED SOUTH OF THE EXISTING A40 AND LARGE ROUNDABOUT ICD AT BARNARD GATE JUNCTION.
7	ALTERNATIVE ACCESSES WILL NEED TO BE PROVIDED FOR ALL EXISTING PROPERTIES AND FIELDS CURRENTLY ACCESSING THE EXISTING A40 DIRECTLY.
8	EAST ALIGNMENT IMPACTS FLOOD PLAIN IMMEDIATELY EAST OF THE PROPOSED BARNARD GATE JUNCTION, HOWEVER FLOOD PLAIN TO THE WEST OF THE DEVELOPER ROUNDABOUT IS NOT IMPACTED AS THE SECTION OF EAST ALIGNMENT GOING THROUGH THIS SECTION IS PUSHED NORTH OF THE EXISTING A40.
9	BUILDABILITY - MINIMAL ISSUES BETWEEN CONSTRUCTION AND MAINTAINING TRAFFIC FLOW FOR THE WEST RURAL LINK, HOWEVER THERE IS POSSIBILITY OF SIGNIFICANT ISSUE IN TRAFFIC MANAGEMENT FOR THE EAST RURAL LINK AND URBAN LINK DURING CONSTRUCTION.

AECOM

PROJECT

A40 SMART CORRIDOR

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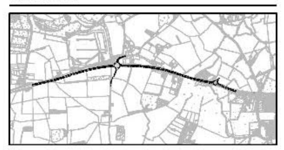
NOTES

1. THIS IS AN OVERVIEW OF DUAL OPTION 4 ALIGNMENT.
2. DESIGN OPTION SHOWN ON THIS DRAWING IS BASED ON ORDINANCE SURVEY TILES AND TOPOGRAPHICAL SURVEYS UNDERTAKEN BY MALCOLM AND HUGHES LAND SURVEYORS LTD. FURTHER INVESTIGATION OF LEVEL INFORMATION IS TO BE UNDERTAKEN TO DETERMINE THE CONSTRUCTABILITY OF EACH OPTION.
3. DATA GATHERED REGARDING LISTED BUILDINGS AND CONSERVATION AREAS WAS EXTRACTED FROM MAGICMAP.DEFRA.GOV.UK.

ISSUE/REVISION

I/R	DATE	DESCRIPTION
P01	11/12/20	For Approval
P02	19/12/20	FOR INFORMATION
P03	21/12/20	FOR INFORMATION

KEY PLAN



SHEET TITLE

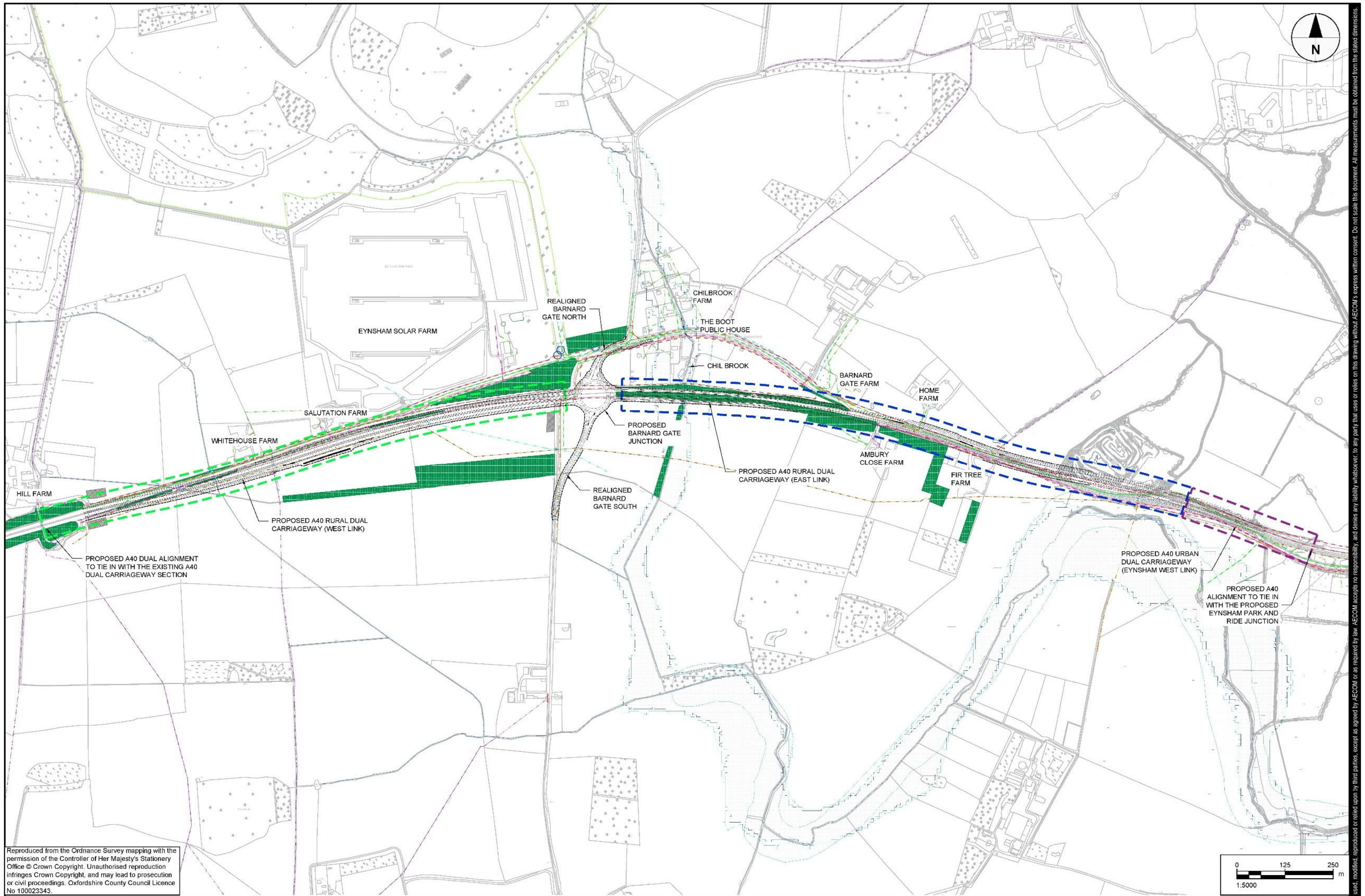
DUAL
OPTION 4 OVERVIEW

SHEET NUMBER

Project Number	Originator	Volume	Revision
DUAL	ACM	HGN	P03

E1_ZZ_ZZ_ZZ -DR -CH -0066 (Location / Type / Role / Number)

Figure 9-4 Road Alignment Option 4



KEY - CONSTRAINTS

- EXISTING FLOOD RISK AREA - ZONE 2
- EXISTING FLOOD RISK AREA - ZONE 3
- EXISTING WATERCOURSE / BROOK
- EXISTING CULVERT
- EXISTING LISTED CONSERVATION AREA
- EXISTING LISTED BUILDING AND SITES
- EXISTING VEGETATION
- EXISTING FIELD ACCESS
- EXISTING HIGHWAY BOUNDARY
- EXISTING PUBLIC RIGHT OF WAY
- WORK IN PROGRESS - RED LINE BOUNDARY
- WORK IN PROGRESS - RED LINE BOUNDARY
- DESIGN RATIONALE
- TYPICAL CROSS SECTION

KEY - UTILITIES

- THAMES WATER TRUNK MAIN
- THAMES WATER MAIN DISTRIBUTION
- BT
- GIGACLEAR
- SOUTHERN GAS NETWORKS INTERMEDIATE PRESSURE PIPE
- SOUTHERN GAS NETWORKS MEDIUM PRESSURE PIPE
- SOUTHERN GAS NETWORKS LOW PRESSURE PIPE
- SCOTTISH AND SOUTHERN ENERGY LOW VOLTAGE CABLE
- VIRGIN MEDIA CABLE

KEY - GENERAL

- INDICATIVE LOCATION OF ATTENUATION POND AND CONNECTIONS
- INDICATIVE EXTENT OF FLOOD COMPENSATION AREA
- EXISTING DIRECT ACCESS TO BE CLOSED
- PROPOSED RETAINING WALL AT BARNARD GATE FARM ENTRANCE

KEY - DESIGN EXTENTS

- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (WEST LINK)
- EXTENTS OF A40 RURAL DUAL CARRIAGEWAY (EAST LINK)
- EXTENTS OF A40 URBAN DUAL CARRIAGEWAY (EYNSHAM WEST LINK)

SN	GENERAL COMMENTS
1	THE PROPOSED DUAL ALIGNMENT GEOMETRY IS COMPLIANT WITH THE REQUIREMENT OF THE DMRB CD 109, HOWEVER THE HORIZONTAL CURVES FOR THE EAST LINK ALIGNMENT WILL REQUIRE 3.5% SUPERELEVATION LEADING TO A NEED FOR DRAINAGE ALONG THE CENTRAL RESERVE, WIDENING OF THE CENTRAL RESERVE AND VERGE FOR VISIBILITY THROUGH THE SECTION OF THE SUPERELEVATED CARRIAGEWAY.
2	THE INSCRIBED CIRCLE DIAMETER (ICD) FOR BARNARD GATE JUNCTION AND DEVELOPER JUNCTION ARE 95m AND 70m RESPECTIVELY.
3	MINIMAL IMPACT ON VEGETATION ALONG THE EXISTING A40.
4	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR NMU FACILITIES PROVISION.
5	THE PROPOSED DUAL ALIGNMENTS ALLOW FOR LAY-BY FACILITIES PROVISION.
6	SIGNIFICANT LAND TAKE REQUIRED DUE TO THE RURAL DUAL LINKS PUSHED NORTH AND SOUTH OF THE EXISTING A40 AND LARGE ROUNDABOUT ICD AT BARNARD GATE JUNCTION.
7	ALTERNATIVE ACCESSES WILL NEED TO BE PROVIDED FOR ALL EXISTING PROPERTIES AND FIELDS CURRENTLY ACCESSING THE EXISTING A40 DIRECTLY.
8	EAST ALIGNMENT IMPACTS FLOOD PLAIN IMMEDIATELY EAST OF THE PROPOSED BARNARD GATE JUNCTION, HOWEVER FLOOD PLAIN TO THE WEST OF THE DEVELOPER ROUNDABOUT IS NOT IMPACTED AS THE SECTION OF EAST ALIGNMENT GOING THROUGH THIS SECTION IS PUSHED NORTH OF THE EXISTING A40.
9	BUILDABILITY - MINIMAL ISSUES BETWEEN CONSTRUCTION AND MAINTAINING TRAFFIC FLOW FOR THE RURAL LINKS, HOWEVER THERE IS POSSIBILITY OF SIGNIFICANT ISSUE IN TRAFFIC MANAGEMENT FOR THE URBAN LINK DURING CONSTRUCTION.
10	THE CARRIAGEWAY EDGE LINES ALLOW FOR CONTINUITY OF THE A40 RURAL DUAL CARRIAGEWAY (EAST LINK) TOWARDS THE PARK AND RIDE JUNCTION IF THE PROPOSED ENYSHAM WEST DEVELOPER ROUNDABOUT IS NOT BUILT.

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NOTES

1. THIS IS AN OVERVIEW OF THE PREFERRED (DUAL OPTION 8) ALIGNMENT AND ACCESSES.
2. DESIGN OPTION SHOWN ON THIS DRAWING IS BASED ON ORDINANCE SURVEY TILES AND TOPOGRAPHICAL SURVEYS UNDERTAKEN BY MALCOLM AND HUGHES LAND SURVEYORS LTD. FURTHER INVESTIGATION OF LEVEL INFORMATION IS TO BE UNDERTAKEN TO DETERMINE THE CONSTRUCTABILITY OF EACH OPTION.
3. DATA GATHERED REGARDING LISTED BUILDINGS AND CONSERVATION AREAS WAS EXTRACTED FROM MAGICMAP.DEFRA.GOV.UK.

ISSUE/REVISION

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P04	21/12/20	FOR INFORMATION

KEY PLAN

SHEET TITLE

DUAL OPTION 8 OVERVIEW

SHEET NUMBER

DUAL - ACM - HGN
E1_ZZ_ZZ_ZZ - DR - CH - 0086
Revision P04

Project Management Initials: Designer:KN Checked:OI Approved:AS ISO A1 594mm x 841mm

Figure 9-5 Road Alignment Option 8