

# Integrated Sustainability Appraisal for the for the Oxfordshire Local Transport and Connectivity Plan

Interim ISA Report

Oxfordshire County Council

October 2021

## Quality information

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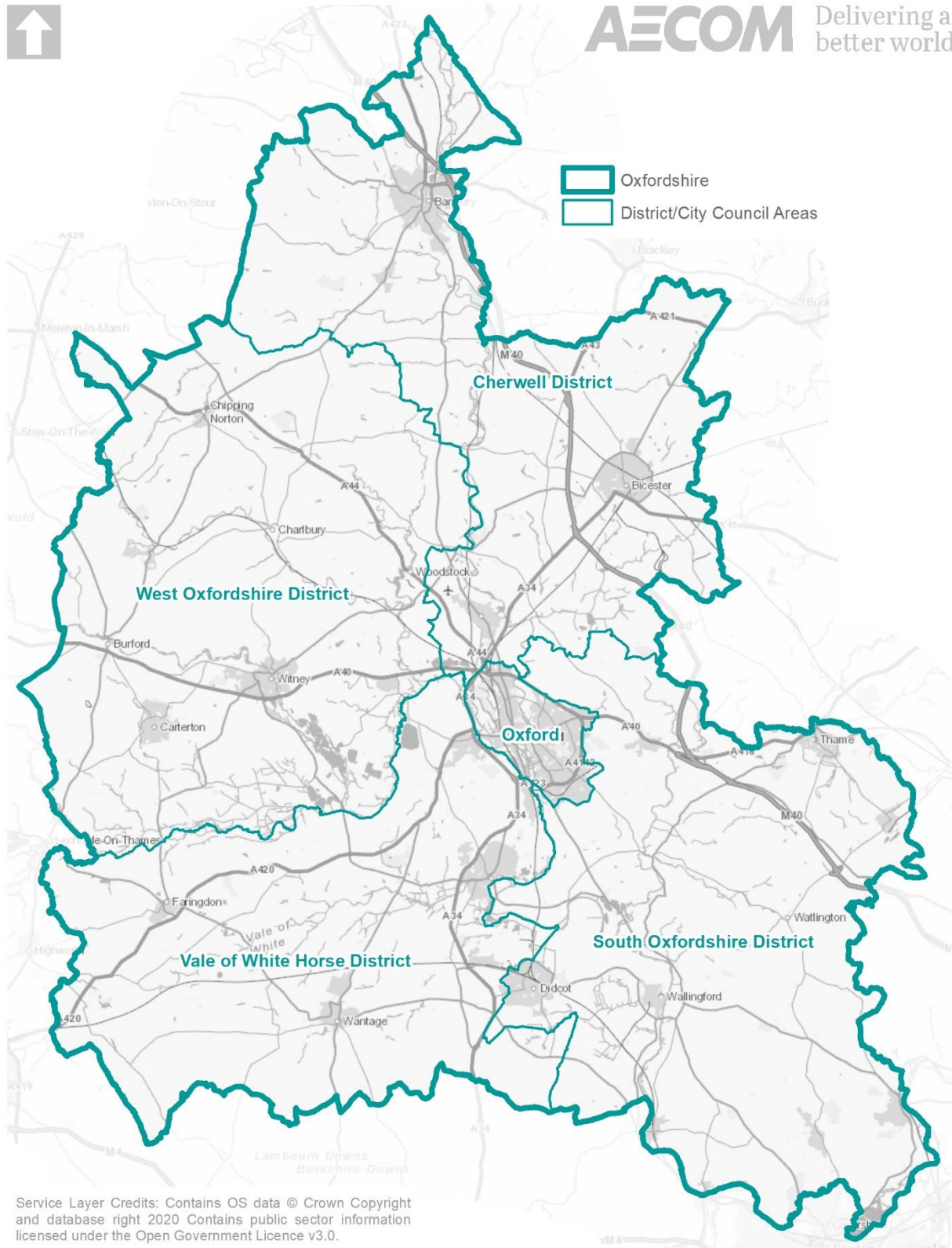
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**Figure 1.1: LTCP plan area**

# 1. Introduction

## Background

- 1.1 AECOM has been commissioned to undertake an independent Integrated Sustainability Appraisal (ISA) in support of the emerging Oxfordshire Local Transport and Connectivity Plan on behalf of Oxfordshire County Council.
- 1.2 Oxfordshire County Council (OCC) is the highway authority for the county of Oxfordshire. In line with the Transport Act 2000 and Local Transport Act 2008, OCC are required to produce a Local Transport Plan which sets out the county's plans and policies for transport and how these will be implemented.
- 1.3 OCC is currently working on producing an updated Local Transport Plan which will outline its overarching ambitions for transport in the county and how these will be achieved between now and 2050. This will be referred to as the Local Transport and Connectivity Plan (LTCP) in order to better reflect Oxfordshire's strategy both for digital infrastructure and for connecting the whole county.
- 1.4 There have been two rounds of public engagement on the LTCP to date. An engagement exercise was undertaken in Spring 2020, with the public and stakeholders asked to comment on a series of topic papers focused on different transport and connectivity topics. Following this, public consultation was conducted on the vision document in February-March 2021. This included seeking feedback on the draft vision, key themes and proposed policies. Feedback from this consultation has been used to refine the vision, key themes and policies in the LTCP.
- 1.5 A further six-week public consultation will be conducted on the LTCP and supporting strategies. This will provide members of the public and stakeholders an opportunity to feedback on the updated vision, key themes and full policies. Amendments will then be made based on the feedback received before the final versions are presented for adoption by the county council.
- 1.6 The ISA undertakes an integrated assessment that incorporates a Strategic Environmental Assessment (SEA), Equality Impact Assessment (EqIA), Health Impact Assessment (HIA) and Community Safety Assessment. This integrated assessment will identify the potential impacts of the LTCP on the environment, community and vitality of Oxfordshire, with a view to promoting a more sustainable plan making process.
- 1.7 Key information relating to the LTCP is presented in **Table 1.1** below.

**Table 1.1: Key facts relating to the Oxfordshire Local Transport and Connectivity Plan**

Responsible authority	Oxfordshire County Council
Title of plan	Oxfordshire Local Transport and Connectivity Plan (LTCP)
Subject	Transport plan
Purpose	The LTCP will provide a strategic framework for future transport planning across Oxfordshire.
Timescale	To 2050
Area covered by the plan	The administrative area of Oxfordshire County ( <b>Figure 1.1</b> above).
Summary of content	The LTCP will set strategic transport planning policy for Oxfordshire over the next 30 years. It will set out which transport interventions the area intends to deliver during the plan period, and how these schemes will be funded.
Contact point	Joe Kay Strategic Transport Lead Oxfordshire County Council Email address: joseph.kay@oxfordshire.gov.uk

## Integrated Sustainability Appraisal (ISA) explained

- 1.8 Integrated Sustainability Appraisal (ISA) is a mechanism for assessing and communicating the likely effects of an emerging plan, and reasonable alternatives, with a view to achieving sustainable development. ISA fulfils the requirements for Strategic Environmental Assessment (SEA) and discharges the duties for Equality Impact Assessment (EqIA), Health Impact Assessment (HIA) and Community Safety Assessment (CSA).
- 1.9 The ISA is being undertaken in line with the procedures prescribed by the Environmental Assessment of Plans and Programmes Regulations 2004 (the SEA Regulations) which transposed into national law the EU Strategic Environmental Assessment (SEA) Directive<sup>1</sup>.
- 1.10 The aim of the ISA will be to inform plan-making both directly (i.e. through structured, systematic and evidence-based analysis), and indirectly (through providing stakeholders with information on potential plan impacts and so facilitating effective consultation).
- 1.11 The use of an ISA approach will help ensure consistency in the development and evaluation of the LTCP and is considered best practice – particularly given the environmental and social constraints in Oxfordshire.
- 1.12 Undertaken through an SEA-led methodology, the ISA will incorporate an HIA, EqIA and a CSA. In addition, a parallel Habitats Regulations Assessment (HRA) process will be undertaken to support the development of the LTCP and reported on separately.

## This Interim ISA Report

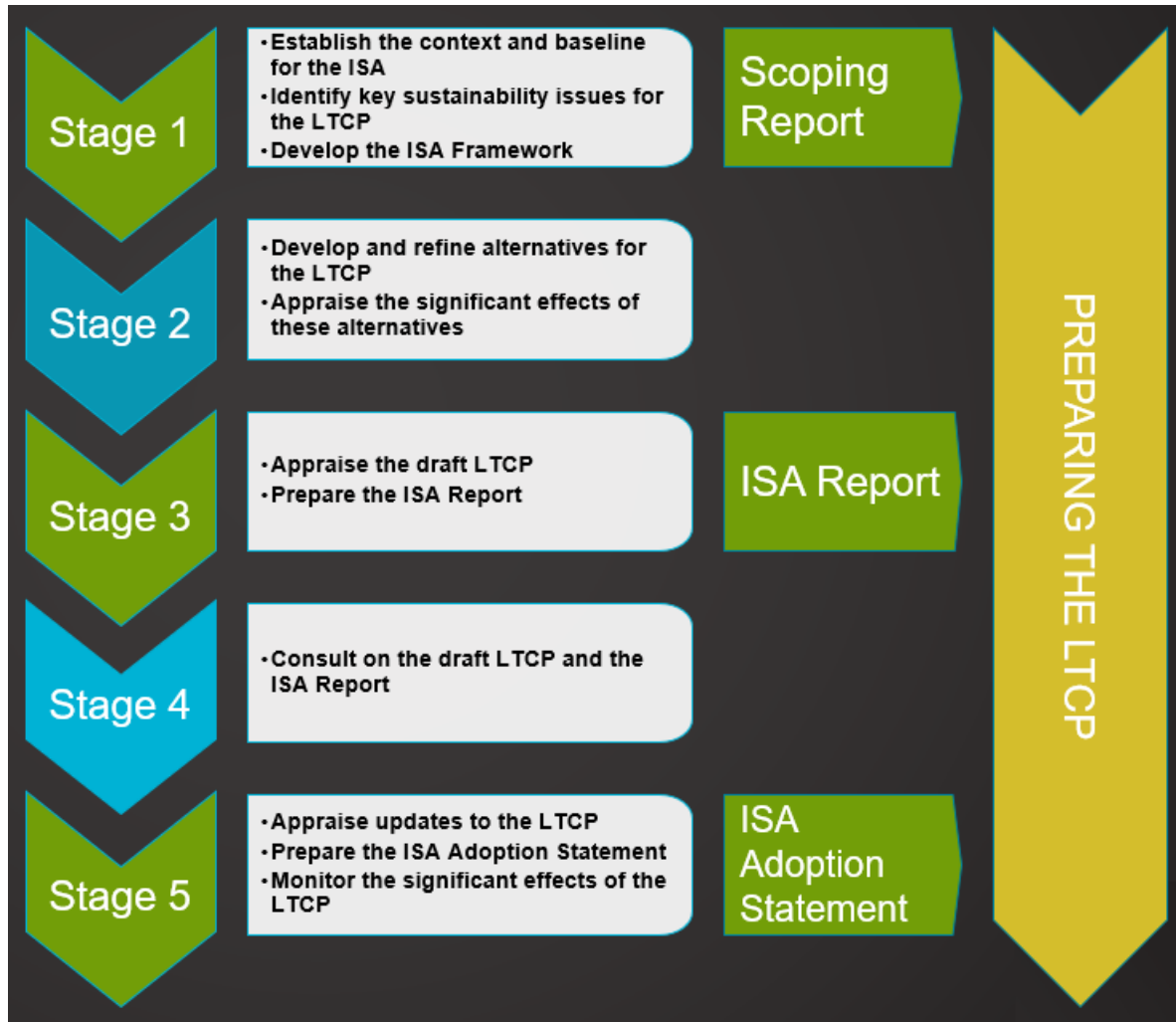
- 1.13 This Interim ISA Report has been designed to support the current decision-making process on the draft LTCP, and has been produced voluntarily with the intention of informing this stage of preparation of the LTCP.
- 1.14 Specifically, this report presents an appraisal of a series of high-level approaches and alternatives which have been evaluated as part of the plan's development. This is for the benefit of decision makers tasked with approving the LTCP for consultation.

<sup>1</sup> Directive 2001/42/EC

1.15 The forthcoming consultation on the LTCP, which is anticipated will be undertaken in November 2021, will be accompanied by a full ISA Report. This will present to stakeholders the information required by the SEA Regulations, and include an assessment of the draft plan as consulted on.

## Key stages of the ISA

1.16 This ISA follows the process required by the SEA Regulations. There is guidance published by government on undertaking SEA, specifically ‘A Practical Guide to the Strategic Environmental Assessment Directive’; the ‘Practical Guide’. This sets out a five-stage process for undertaking SEA. This process, in conjunction with the SEA Regulations, guides this assessment. The stages and outputs for the ISA are replicated in **Figure 1.2** below.



**Figure 1.2: Key stages of the ISA for the LTCP, and ISA outputs**

1.17 The current report presents the findings of Stage 2 above.

## Current stage: Developing and appraising reasonable alternatives for the LTCP

- 1.18 A key element of the ISA process is the assessment of 'reasonable alternatives' for the LCTP. The SEA Regulations<sup>2</sup> are not prescriptive as to what constitutes a reasonable alternative, stating only that the Environmental Report (i.e. ISA Report) should present an appraisal of the '*plan and reasonable alternatives taking into account the objectives and geographical scope of the plan*'.
- 1.19 The ISA process has therefore assessed a range of potential options as reasonable alternatives, which 1) consider different approaches for four geographical areas within Oxfordshire and 2) different approaches for key plan issues.
- 1.20 These include options for:
- Greater Oxford
  - Oxfordshire's Market Towns
  - Well-connected rural areas
  - Less well-connected rural areas
- 1.21 Options for the following thematic issues relating to:
- The climate emergency
  - Road safety
  - Freight.
- 1.22 **Chapters 3 and 4** describe the options considered for each of these areas and themes, and presents the appraisal of the options.

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<sup>2</sup> Environmental Assessment of Plans and Programmes Regulations 2004



## 2. Scope of the appraisal

### What is the scope of the ISA?

#### ISA Scoping Report

- 2.1 The SEA Regulations require that: “*When deciding on the scope and level of detail of the information that must be included in the report, the responsible authority shall consult the consultation bodies*”. In England, the consultation bodies are the Environment Agency, Historic England and Natural England.<sup>3</sup> These authorities were consulted on the scope of the LTCP ISA in April 2021. In addition, given the coverage of the AONBs over part of Oxfordshire, the Cotswold, North Wessex Downs and Chilterns AONB management units were consulted.
- 2.2 The baseline information (including baseline data and context review) initially included in the ISA Scoping Report has been updated in the period since and provides the basis for the ISA process.

#### ISA Framework

- 2.3 Drawing on the review of the sustainability context and baseline, the ISA Scoping Report identified a range of sustainability issues that should be a particular focus of ISA, ensuring it remains targeted on the most important issues. These issues were then translated into an ISA ‘framework’ of objectives and appraisal questions.
- 2.4 The ISA Framework, which has been tailored for the LTCP, provides a way in which the sustainability effects of the LTCP and alternatives can be identified and subsequently analysed based on a structured and consistent approach.
- 2.5 The ISA Framework and the appraisal findings in this Interim ISA Report have been presented under eight ISA Themes, reflecting the range of information being considered through the ISA process.
- Biodiversity;
  - Water and Soil Resources;
  - Historic Environment;
  - Landscape;
  - Air Quality and Noise;
  - Climate Change;
  - Healthy and Safe Communities; and
  - Equalities.
- 2.6 The ISA Framework is presented in **Table 2.1** below.

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<sup>3</sup> In line with Article 6(3) of the SEA Directive, these consultation bodies were selected because “*by reason of their specific environmental responsibilities, [they] are likely to be concerned by the environmental effects of implementing plans and programme*”.

**Table 2.1: ISA Framework**

ISA theme	Objectives	Assessment questions – will the option/proposal help to:
<b>Biodiversity</b>	Support the integrity of designated sites	<ul style="list-style-type: none"> <li>• Protect the integrity of the SACs within Oxfordshire?</li> <li>• Avoid negative impacts, and where possible improve the condition of SSSIs within Oxfordshire?</li> <li>• Manage pressures on locally designated sites for biodiversity and geodiversity in Oxfordshire?</li> <li>• Maintain, and where possible, enhance the status of NNRs, LNRs, LWS, LGS, CTAs and RVNRs in Oxfordshire and people’s access to these?</li> </ul>
	Protect and enhance habitats and species	<ul style="list-style-type: none"> <li>• Protect and enhance semi-natural habitats?</li> <li>• Protect and enhance priority habitats, and the habitat of priority species?</li> <li>• Achieve a net gain in biodiversity?</li> <li>• Increase the resilience of the Oxfordshire’s biodiversity to the potential effects of climate change?</li> <li>• Reduce the impact of the transport network on species’ severance?</li> </ul>
	Increase habitat connectivity across the transport network	<ul style="list-style-type: none"> <li>• Contribute to the creation of coherent and resilient ecological networks? (i.e. allow passage of wildlife across roads, railway lines, cycle paths through the use of animal bridges/tunnels or support green infrastructure enhancements)?</li> </ul>
<b>Water and Soil Resources</b>	Minimise the impact which transport, and transport infrastructure has on water quality, associated biodiversity, and on the physical state of water bodies.	<ul style="list-style-type: none"> <li>• Support improvements to water quality, including through minimising the impacts of diffuse run off from road surfaces?</li> <li>• Protect surface water and groundwater resources?</li> <li>• Minimise physical alterations to water bodies?</li> <li>• Minimise the impacts to, and where possible enhance the quality of water bodies of strategic significance for water supply?</li> </ul>
	Promote the efficient use of land.	<ul style="list-style-type: none"> <li>• Facilitate the use of previously developed land?</li> <li>• Avoid the development of the best and most versatile agricultural land (Grade 1 to 3a agricultural land)?</li> </ul>
	Promote sustainable waste management solutions that encourage the reduction, re-use and recycling of waste during construction	<ul style="list-style-type: none"> <li>• Encourage recycling of materials and minimise consumption of resources during construction, operation and maintenance of new transport infrastructure?</li> <li>• Encourage the use of alternative transport methods for the movement of waste in the county?</li> <li>• Protect the integrity of mineral safeguarding areas and mineral consultation zones?</li> </ul>
<b>Historic Environment</b>	Preserve and enhance Oxfordshire’s heritage resource, including its historic environment and archaeological assets.	<ul style="list-style-type: none"> <li>• Conserve the outstanding universal value of World Heritage Sites?</li> <li>• Conserve and enhance the significance of buildings and structures of architectural or historic interest, both designated and non-designated, and their setting?</li> <li>• Conserve and enhance the special interest, character and appearance of conservation areas and their settings?</li> </ul>

ISA theme	Objectives	Assessment questions – will the option/proposal help to:
		<ul style="list-style-type: none"> <li>Conserve and enhance archaeological remains and support the undertaking of archaeological investigations and, where appropriate, recommend mitigation strategies?</li> <li>Reinforce the distinctive historic landscape character of Oxfordshire?</li> </ul>
	Promote understanding of Oxfordshire's heritage resource	<ul style="list-style-type: none"> <li>Support access to, interpretation and understanding of the historic environment?</li> </ul>
<b>Landscape</b>	Protect and enhance the character and quality of the Oxfordshire's landscapes, townscapes and villagescapes.	<ul style="list-style-type: none"> <li>Support the management objectives of the AONBs across Oxfordshire?</li> <li>Support the five purposes of the Green Belt?</li> <li>Conserve and enhance locally important landscape, townscape and villagescape features?</li> <li>Improve accessibility by sustainable transport to Oxfordshire's landscape resources, including within the AONBs?</li> </ul>
<b>Air Quality and Noise</b>	Deliver improvements in air quality in Oxfordshire	<ul style="list-style-type: none"> <li>Reduce emissions from transport?</li> <li>Contribute to improvements in air quality within AQMAs?</li> <li>Promote the use of zero emission vehicles?</li> <li>Promote enhancements to green infrastructure networks to facilitate increased absorption and dissipation of nitrogen dioxide and other pollutants?</li> <li>Encourage a modal shift to more sustainable transport?</li> <li>Improve access to active travel networks?</li> </ul>
	Reduce the impact on environmental noise from transportation sources	<ul style="list-style-type: none"> <li>Contribute to lowering noise levels?</li> <li>Seek to mitigate the impact on areas likely to be affected by noise, and reducing the noise generated at source and/or containing the noise generated?</li> <li>Utilise measures to reduce traffic noise specifically during transport planning, such as low noise road surfacing?</li> </ul>
<b>Climate Change</b>	Support climate change mitigation across Oxfordshire through limiting the contribution of transport to greenhouse gas emissions.	<ul style="list-style-type: none"> <li>Limit the increase in the carbon footprint resulting from new transport infrastructure provision?</li> <li>Seek to significantly reduce the emissions from existing transport infrastructure in line with a pathway to the County Council's target for net zero carbon by 2050?</li> <li>Promote the use of sustainable modes of transport, including walking, cycling and public transport?</li> <li>Reduce the need to travel?</li> <li>Reduce energy consumption from non-renewable resources?</li> <li>Encourage the update of electric and alternatively fuelled vehicles?</li> </ul>
	Support the resilience of Oxfordshire's transport networks to the potential effects of climate change	<ul style="list-style-type: none"> <li>Increase the resilience of the transport network to the potential effects of climate change?</li> <li>Reduce the impact of embodied carbon in transport infrastructure? Promote a coordinated approach to</li> </ul>

ISA theme	Objectives	Assessment questions – will the option/proposal help to:
		<p>the management of flood risk across public infrastructure provision?</p> <ul style="list-style-type: none"> <li>• Improve and extend green infrastructure networks as part of transport infrastructure provision to support adaptation to the potential effects of climate change?</li> <li>• Sustainably manage water run-off, reducing surface water runoff?</li> <li>• Ensure the potential risks associated with climate change are considered through new transport network programmes?</li> <li>• Reduce the impact of extreme weather events on the condition of the transport network?</li> </ul>
<b>Healthy and Safe Communities</b>	Promote sustainable transport use and reduce the need to travel	<ul style="list-style-type: none"> <li>• Encourage modal shift to more sustainable forms of travel?</li> <li>• Support accessibility to key services and facilities?</li> <li>• Reduce the need to travel?</li> </ul>
	Improve the health and well-being of Oxfordshire’s residents	<ul style="list-style-type: none"> <li>• Reduce the impacts of air and noise pollution on health?</li> <li>• Promote the use of healthier modes of travel?</li> <li>• Enhance the provision of, and access to, green infrastructure in the county, in accordance with national standards?</li> <li>• Avoid any negative impacts to the quality and extent of existing recreational assets, such as formal or informal footpaths?</li> <li>• Improve access to the countryside for recreation?</li> </ul>
	Support the vitality of communities	<ul style="list-style-type: none"> <li>• Enhance the vitality of Oxfordshire’s city, town, local and neighbourhood centres?</li> </ul>
	Improve road safety	<ul style="list-style-type: none"> <li>• Improve road safety and reduce road accidents, including those killed or seriously injured?</li> </ul>
	Enhance community safety	<ul style="list-style-type: none"> <li>• Reduce crime and improve perceptions of community safety?</li> <li>• Reduce community severance?</li> </ul>
<b>Equalities</b>	Advance equality of opportunity for all	<ul style="list-style-type: none"> <li>• Promote access to transport services for all including those with and without shared protected characteristics?</li> <li>• Provide opportunities to foster good relations between groups?</li> </ul>
	Cater for existing and future residents’ needs as well as the needs of different groups in the community, and improve access to local, high-quality community services and facilities.	<ul style="list-style-type: none"> <li>• Maintain or enhance the quality of life of residents?</li> <li>• Address the needs of all age groups?</li> <li>• Meet the needs of those living in rural areas?</li> <li>• Improve accessibility of key infrastructure and local facilities, including specialist services for disabled and older people?</li> <li>• Reduce health inequalities and improve mobility?</li> <li>• Improve perceptions of security when accessing and using the transport network?</li> </ul>

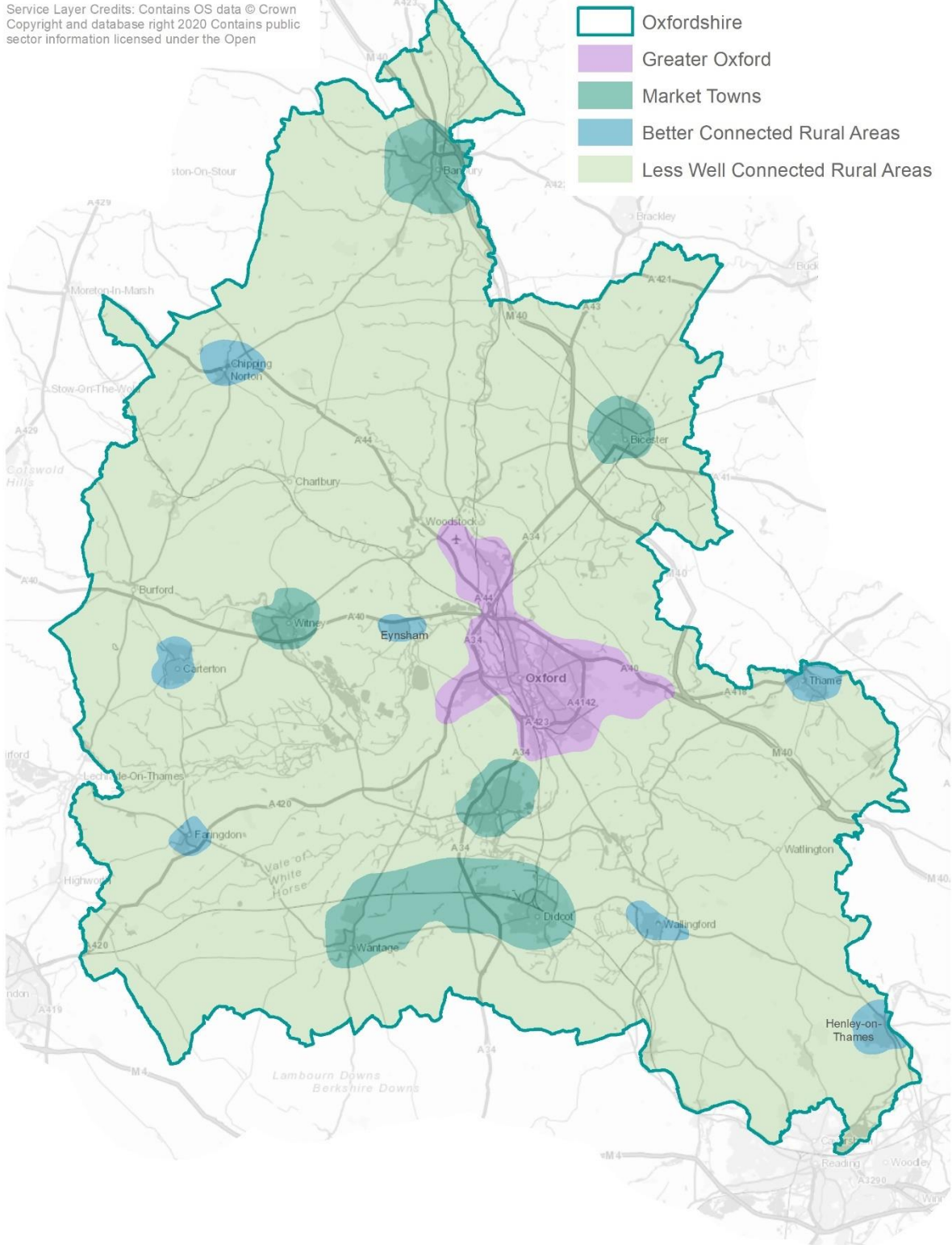
## 3. Appraisal of area-led options

### An area-led approach to considering reasonable alternatives

- 3.1 The LTCP covers a large and diverse county, with a wide range of transport challenges. These challenges sit within diverse environmental and socio-economic settings.
- 3.2 A central role of appraising reasonable alternatives through the ISA process is to help identify the relative sustainability merits of different approaches to delivering enhanced transport provision in the county. In recognition of the diversity of Oxfordshire, an initial approach to the appraisal of reasonable alternatives subdivides the county into a number of distinct geographical areas.
- 3.3 The four areas are as follows
- **Greater Oxford:** This covers the city of Oxford, and its hinterland, including Horspath, Wheatley, and Kidlington.
  - **Market towns:** This covers the market towns of Oxfordshire including Banbury, Abingdon, Bicester, Witney and the Science Vale (comprising the grouping of Wantage, Grove, Didcot, Harwell, Milton and Culham).
  - **Better connected rural areas:** This covers the better-connected rural areas in Oxfordshire, focusing on Carterton, Eynsham, Henley, Wallingford, Thame, Faringdon and Chipping Norton.
  - **Less well-connected rural areas:** This covers the less well-connected rural areas in Oxfordshire, incorporating the rural hinterland of the county and smaller towns. These include Burford, Woodstock, Shrivenham, Kingston Bagpuize, Watlington, Chinnor, Chalgrove, Deddington, Kirtlington, and Upper Heyford.
- 3.4 **Figure 3.1** highlights the broad locations covered by these areas.
- 3.5 For each of these areas a number of options have been identified and subsequently appraised. For all areas a do minimum is described which would be applied in all circumstances, together with one or more options for additional levels of intervention over and above the do minimum. These options are designed to reflect the key issues facing that area, and the different approaches that can be taken to intervention/investment in transport infrastructure and management.
- 3.6 The detail of the options appraised, and the appraisal findings, are presented below.



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**Figure 3.1 Areas of Oxfordshire for which options have been appraised for the LTCP**

## Greater Oxford

3.7 This area covers the city of Oxford, and its hinterland, including Horspath, Wheatley, and Kidlington.

3.8 Figures 3.2 to 3.4 highlight the key environmental constraints in this area.

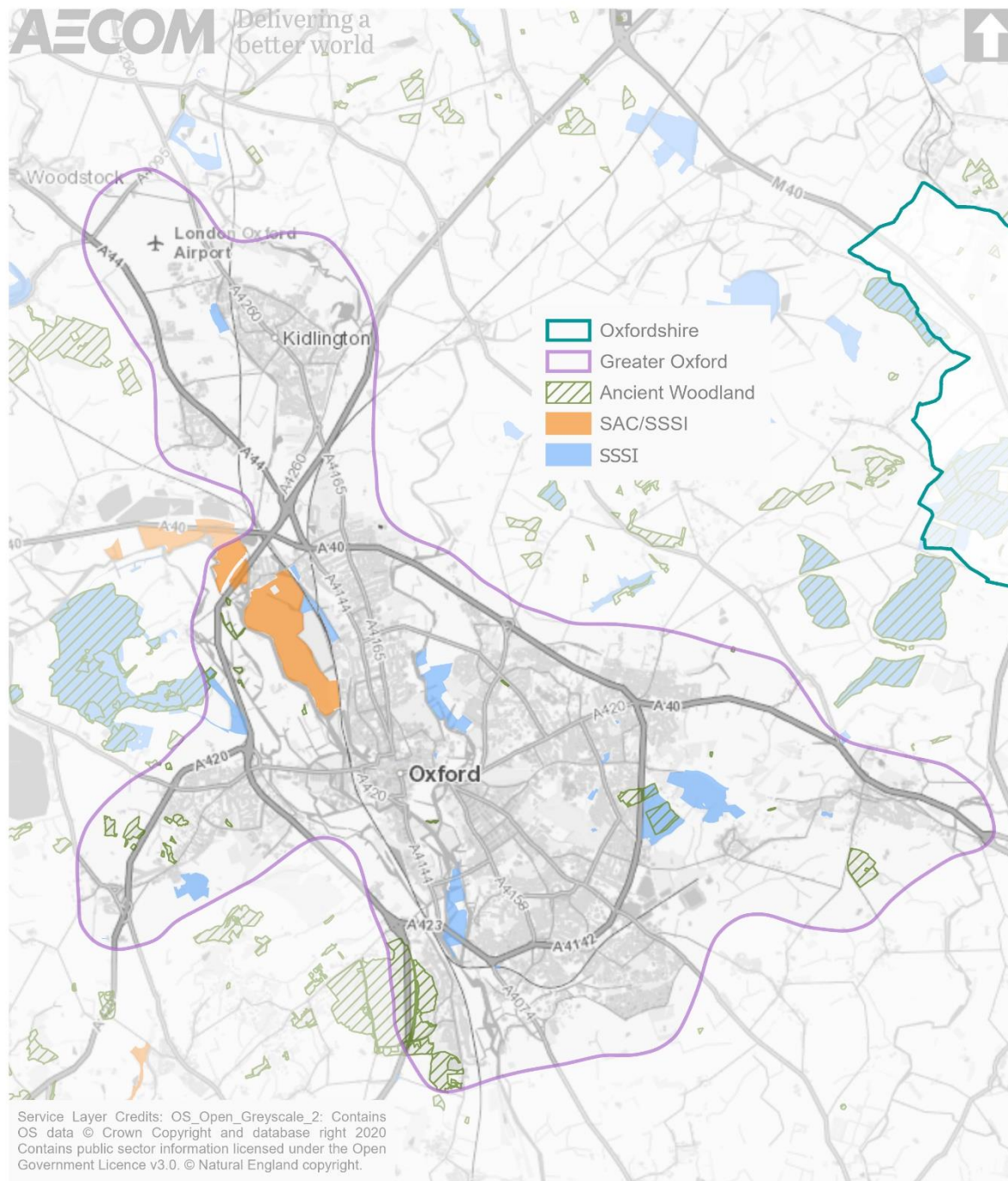


Figure 3.2: Biodiversity designations in the vicinity of Oxford

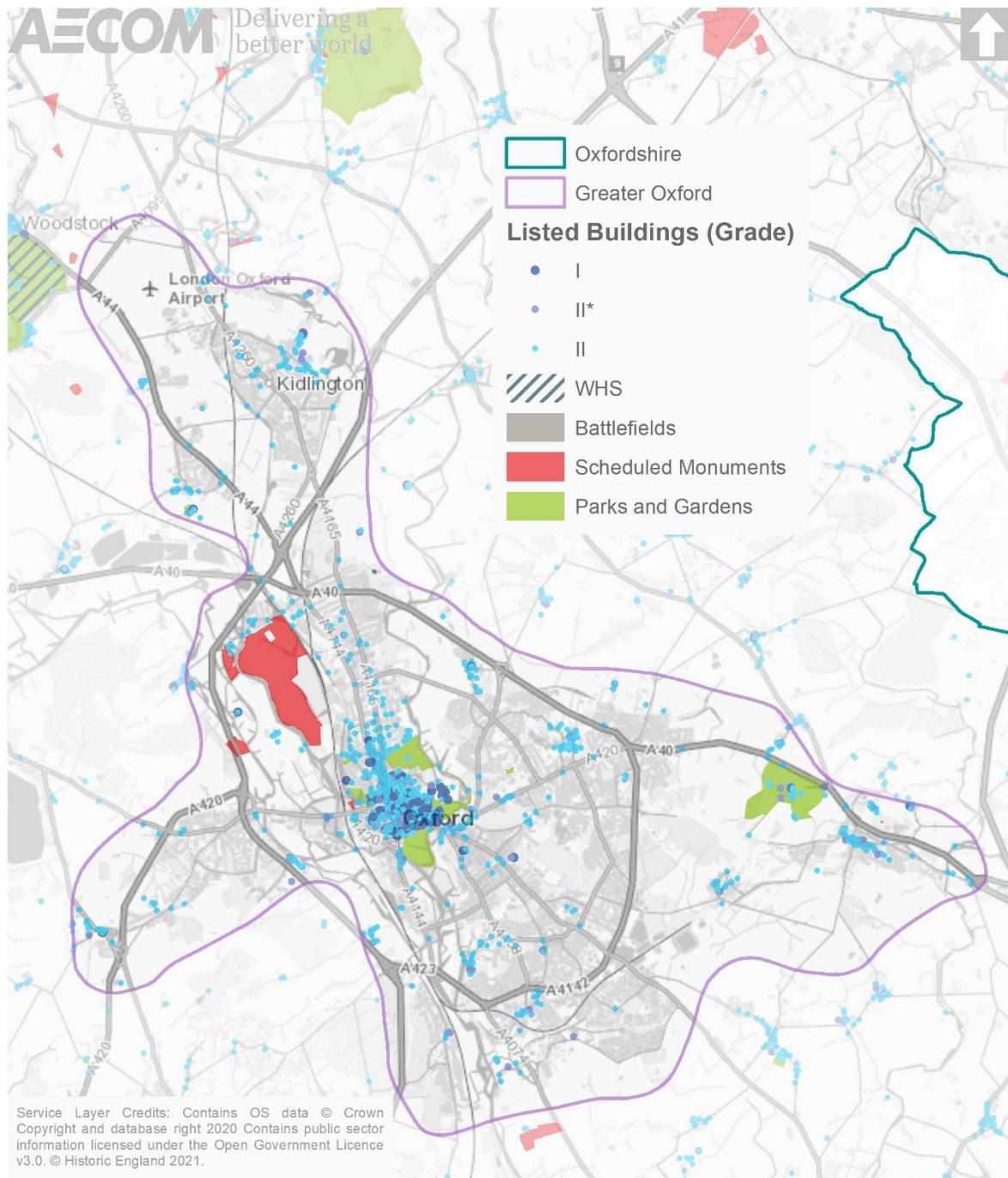
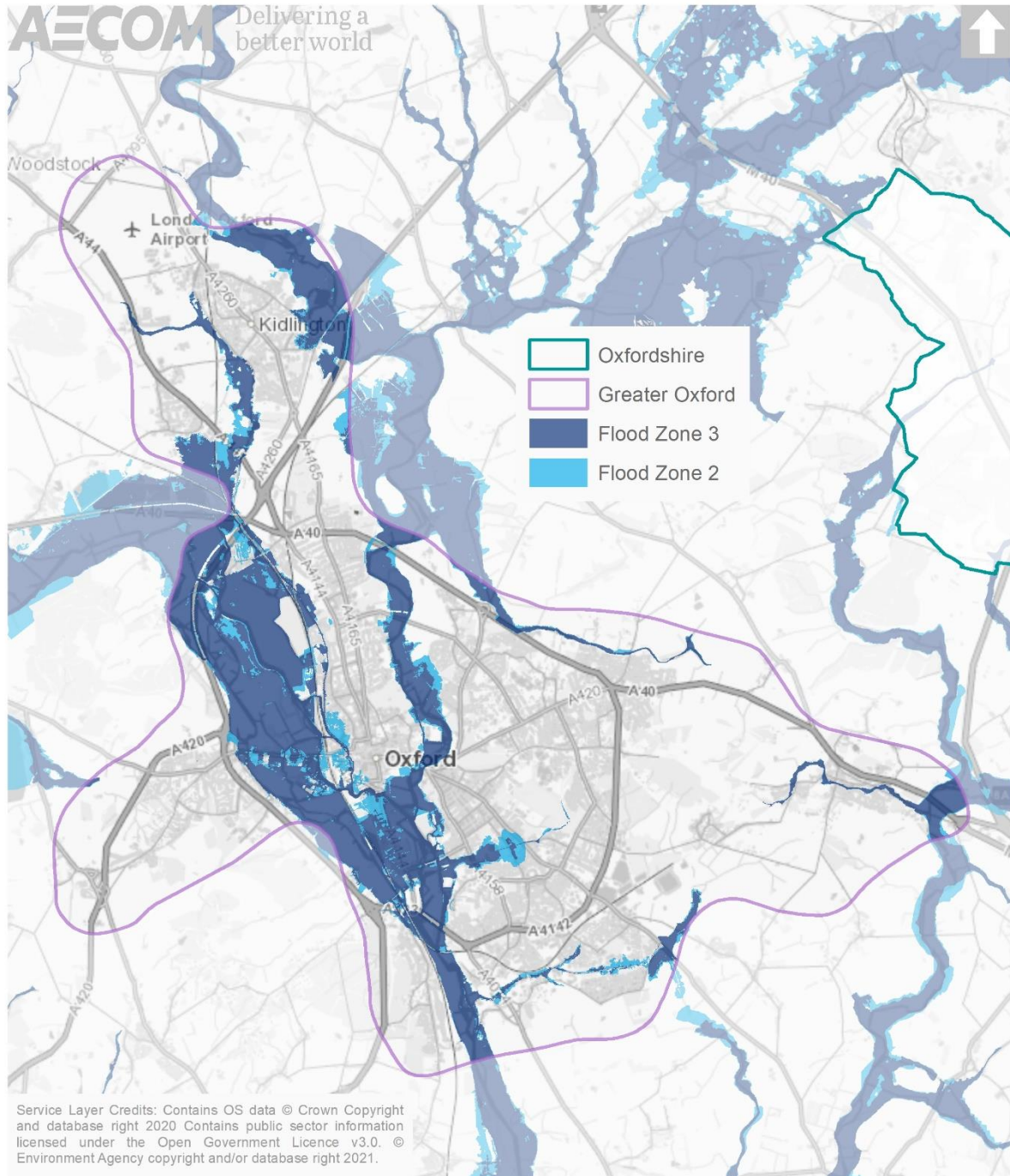


Figure 3.3: Historic environment designations in the vicinity of Oxford





**Figure 3.4: Flood zones in the vicinity of Oxford**

3.9 Three options have been considered for the Greater Oxford area as alternatives for the ISA, as follows.

### Option GO1: Do minimum

3.10 A 'do minimum' option would rely on committed investment, which would continue at a local and strategic level. In practice this would incorporate existing measures such as:

- Delivery of the Connecting Oxford proposals:
  - New traffic filters in Oxford
  - Workplace parking levy in the Eastern arc of Oxford
  - Oxford Zero Emission Zone
  - Oxford city cycling quickways
  - Oxford Low Traffic Neighbourhood trials
  - Various road corridor improvements
  - Various smaller active travel, bus and public realm improvements

### Option GO2: Optimise use of existing infrastructure

3.11 This option would comprise enhancements to the existing city-wide transport network. It would incorporate improved bus services on key corridors, enhancements to walking and cycling linkages, an expansion of demand management measures and more effective use of Park and Ride provision.

### Option GO3: Initiate more significant enhancements

3.12 This option would seek to take forward significant capacity enhancements to the city's transport network. This would include, for example, an expansion of Park and Ride provision and development of the network into a rapid transit system, or delivery of major rail proposals such as Cowley Branch line and a comprehensive upgrade of the railway between Oxford and Didcot. In terms of the road network it would initiate significant junction capacity enhancements at key 'pinchpoints' and potentially, initiate new local and cross-city links (if possible).

### Appraisal findings

3.13 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

3.14 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 3.1: Appraisal of options for Greater Oxford**

**Option GO1: Do minimum**

**Option GO2: Optimise use of existing infrastructure**

**Option GO3: Initiate more significant interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		GO 1	GO 2	GO 3
Biodiversity	<p>The key internationally designated site in the vicinity of the Oxford urban area is the Oxford Meadows SAC, which incorporates the nationally designated Pixey and Yarnton Meads SSSI, the Cassington Meadows SSSI and Port Meadow with Wolvercote Common &amp; Green SSSI. This extends along the eastern bank of the River Thames from the north west of the city centre. Further SSSIs in the vicinity of the city include Hook Meadow and The Trap Grounds SSSI, Wytham Woods SSSI, New Marston Meadows SSSI, Magdalen Grove SSSI, Iffley Meadows SSSI, Brasenose Wood and Shotover Hill SSSI, Holton Wood SSSI and Rushy Meadows SSSI.</p> <p>Reflecting the geodiversity of the city, there are also a number of smaller SSSIs designated for their geological interest, including Sugworth SSSI, Magdalen Quarry SSSI, Littlemore Railway Cutting SSSI, Rock Edge SSSI, Lye Valley SSSI, Littleworth Brick Pit SSSI, and Lyehill Quarry SSSI.</p> <p>Key habitats in the urban area include lowland meadow, coastal and floodplain grazing marsh and good quality semi-improved grassland Biodiversity Action Plan (BAP) Priority Habitats along the River Thames, deciduous woodland and lowland dry acid grassland BAP Priority Habitats on the edge of the city and wood-pasture and parkland, lowland meadows, lowland fens, deciduous woodland and good quality semi-improved grassland BAP Priority Habitats located along the River Cherwell corridor.</p> <p>Option GO3, through facilitating the delivery of significant new transport infrastructure in and around the urban area, has increased potential to lead to significant effects on biodiversity habitats, species and networks. This includes from land take, habitat loss and fragmentation and disturbance. In this respect Option GO1, which relies on committed investment, and Option GO2, which focuses on enhancing existing transport infrastructure, would lead to fewer physical impacts on key areas of sensitivity. Option GO2 however has additional potential to lead to impacts on habitats and ecological networks on existing transport corridors. This is given many existing transport routes are important biodiversity corridors, containing and linking key habitats, and adjoining designated sites. These corridors support a significant number of protected species. As such, Option GO2 still has the potential to lead to significant effects without the implementation of appropriate avoidance and mitigation measures. However, the scale of effects is less likely to be significant than those which result from Option GO3.</p> <p>It should be noted though that the delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. For example, the Government’s 25-year Environment Plan seeks to embed an environment net gain principle for infrastructure development. In addition, National Highways’ Road Investment Strategy states that by 2040 its schemes must deliver a net gain in biodiversity and Network Rail has committed to make a net positive contribution to biodiversity. In this context there is scope for transport infrastructure enhancements to support environmental net gain in and around the urban area. This includes through delivering enhancements in the Network Enhancement Zones<sup>4</sup> and Network Expansion Zones<sup>5</sup> identified in the vicinity of Oxford.</p>	1	2	3

<sup>4</sup> Network Enhancement Zones comprise land within close proximity to existing habitat components that have been identified by Natural England as likely to be suitable for habitat re-creation for the particular habitat.

<sup>5</sup> Network Expansion Zones are areas identified with potential for expanding, linking and joining biodiversity networks.

**Option GO1: Do minimum**

**Option GO2: Optimise use of existing infrastructure**

**Option GO3: Initiate more significant interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		GO 1	GO 2	GO 3
Water and Soil Resources	<p>Option GO3, through facilitating the delivery of significant new transport infrastructure, will require larger landtake than Option GO1 and GO2. This has increased potential to lead to the development of previously undeveloped land, including, potentially the productive agricultural land classified as Grade 2 or 3b (i.e. land classified as the best and most versatile) present in the area. Without mitigation measures, an increased delivery of new transport infrastructure has the potential to have impacts on water and soil quality through increases in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage. Option GO2 also offers additional opportunities to deliver enhancements to surface water management on existing transport corridors.</p>	2	1	3
Historic Environment	<p>The Oxford urban area has a rich historic environment resource, as highlighted by the significant number of features and areas designated for their heritage value. The historic environment of the urban area is also framed by the significant number of undesignated features of heritage value which are vulnerable to change given their lack of statutory and local protections. In addition, transport corridors are often themselves important heritage resources. The urban area and area around the city also has a rich and diverse archaeological resource.</p> <p>The increased number of physical transport infrastructure schemes likely to be initiated through Option GO3 have the potential to lead to impacts on the key assets (including designated features and areas) located in the vicinity of the key routes and areas targeted for interventions. The significance of effects from these interventions will however depend on design, layout and scale of the schemes, and mitigation and avoidance measures proposed.</p> <p>It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and the setting of the historic environment. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm, with benefits for the setting of the historic environment.</p> <p>In relation to Option GO2, an approach which focuses to a greater degree on optimising existing transport infrastructure has the potential to incorporate proposals which better reveal the significance of heritage assets. In addition, through doing the most of the options to encourage of modal shift, facilitate a limitation in traffic flows and improve traffic management, the option has the potential to do more to limit adverse effects from traffic on the setting of historic environment assets. In this respect a 'do minimum' approach taken forward through Option GO1 has somewhat more limited potential to bring similar benefits.</p>	2	1	3
Landscape	<p>Option GO3, through facilitating the delivery of significant new transport infrastructure, has increased potential to have impacts on townscape and landscape character in and around the Oxford urban area. Option GO1 and GO2, through focusing on the existing urban transport network, is less likely to deliver new infrastructure which has significant impacts on local character, distinctiveness or a sense of place.</p> <p>The significance of effects from schemes initiated by Option GO3 would however depend on the design, layout and scale of the schemes, and the mitigation and avoidance measures proposed. It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and townscape/landscape character. Similarly, measures which help to</p>	2	1	3

**Option GO1: Do minimum**  
**Option GO2: Optimise use of existing infrastructure**  
**Option GO3: Initiate more significant interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		GO 1	GO 2	GO 3
	<p>relieve congestion may support improvements to local distinctiveness and the quality of the public realm.</p> <p>With regards to Option GO2, an approach which focuses on existing corridors is less likely to lead to direct adverse impacts on townscape and landscape character. Local character also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the townscape and landscape character. In this respect a 'do minimum' approach taken forward through Option GO1 has less potential to initiate measures which bring these benefits.</p>			
Air Quality and Noise	<p>Oxford City Council previously declared Air Quality Management Areas (AQMAs) in central Oxford (2003) and at Green Road roundabout (2005) where it was deemed probable that the annual mean nitrogen dioxide objective will not be met. Following further detailed assessments in 2008 and 2009 several additional areas were identified where the annual mean nitrogen dioxide objective will not be met. In September 2010 the City Council made an Air Quality Management Order declaring the whole of the city as an AQMA, to include the seven localised hotspots where pollution levels of nitrogen dioxide have exceeded national objectives. AQMAs were also declared for nitrogen dioxide relating to transport emissions for parts of Botley in 2008 and, by Cherwell District Council, Kidlington in 2014.</p> <p>Through delivering a more comprehensive package of schemes which supports modal shift to alternative modes of transport to the private car, Option GO2 has more potential than Option GO1 to support air and noise quality enhancements in and around Oxford.</p> <p>Option GO3, through bringing forward junction capacity enhancements and new road schemes has the potential to lead to air quality enhancements at key 'pinchpoints' on the network which have existing air quality issues. In combination with an expansion of Park and Ride provision and development of the network into a rapid transit system, or delivery of major rail proposals, this has the potential to support significant enhancements of air quality at specific locations. However, through junction improvements and road schemes contributing to an overall increase in traffic flows on the wider road network, the option has the potential to increase traffic flows over a broader area, including through stimulating induced demand. This may contribute to increases in emissions of the key pollutants which affect air quality over a wider area. For the same reason, the option also has the potential to lead to more significant effects on noise quality.</p>	2	1	3
Climate Change	<p>Option GO3's promotion of road schemes that relieve congestion and / or increase capacity has the potential effect of releasing demand for vehicle trips currently suppressed. As such the release of this induced demand may lead to increases in greenhouse gas emissions, even with rail improvements proposed through the option. An expansion of Park and Ride provision through the option also has the potential to encourage use of the private car for at least part of the journey.</p> <p>Option GO2, through delivering a more comprehensive package of schemes that Option GO1, will do more to support modal shift to alternative modes of transport to the private car. As such the option has additional potential to support a limitation of greenhouse gas emissions from transport.</p> <p>In terms of adapting to the effects of climate change, Option GO3, and to a lesser extent, Option GO2, has more potential than Option GO1 to lead to</p>	2	1	3

**Option GO1: Do minimum**  
**Option GO2: Optimise use of existing infrastructure**  
**Option GO3: Initiate more significant interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		GO 1	GO 2	GO 3
	<p>proposals which enhance the resilience of particular locations to climate change. This is given the option will deliver transport schemes with the potential to initiate physical measures which will limit climate change impacts. However, the effect of initiatives depends on detailed interventions, including scheme design and layout, the integration of green infrastructure provision and other measures to help regulate the effects of extreme weather events. Similarly, the effect of initiatives on fluvial, surface water and groundwater flooding depend on scheme design considerations, including location, design and layout and the implementation of measures such as sustainable drainage systems.</p>			
Healthy and Safe Communities	<p>A do minimum approach promoted through Option GO1 would do less to help address the key socio-economic and quality of life issues influenced by transport in and around the Oxford urban area. In this context a range of issues are less likely to be addressed without appropriate interventions, including accessibility issues, congestion and severance issues, and elements relating to social exclusion.</p> <p>Option GO2, through providing a focus on improved bus services and enhancements to walking and cycling linkages would do more than Option GO1 to encourage public transport use and active travel. In addition to supporting social inclusion and community vitality, this will contribute to the quality of life of residents through limiting the impact of traffic and congestion on neighbourhoods and on severance issues.</p> <p>In addition to increasing travel choice through initiating significant transport capacity enhancements, including by rail, Option GO3 has the potential to lead to a range of economic opportunities through enhancing connections with the strategic and local transport network and key employment and growth areas. This will help maximise economic opportunities and enhance the vitality of the county's economy through improvements in transport connectivity.</p> <p>Option GO3, through enabling a reduction of congestion at key bottlenecks on the network, has the potential to reduce the impacts of traffic and congestion on health and wellbeing at these locations. This includes through enhancements to air and noise quality, and improvements in the quality of the public realm. However, a potential stimulation of traffic growth over a larger area due to induced demand has the potential to have wider negative effects on health and wellbeing of residents through impacts on the quality of the public realm and a contribution to air and noise pollution. This does however have the potential to be offset by the additional enhancements to the rail and Park and Ride network facilitated by the option.</p> <p>Option GO2 has increased potential to support modal shift from the private car. This will support healthier modes of travel, including through encouraging active travel modes such as walking and cycling. Through promoting modal shift, and limiting induced demand, it also offers the potential to support air and noise quality enhancements and enhancements to the quality of the public realm. This will support the health and wellbeing of residents.</p> <p>Options GO2 and GO3 have increased potential to facilitate enhancements to multifunctional green infrastructure networks in the Oxford area alongside transport infrastructure improvements, including along existing transport corridors. This will provide benefits for health and wellbeing.</p> <p>Option GO1, through initiating a do minimum approach, has the least potential to address the transport issues which adversely affect health and wellbeing.</p>	3	2	1

**Option GO1: Do minimum**

**Option GO2: Optimise use of existing infrastructure**

**Option GO3: Initiate more significant interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		GO 1	GO 2	GO 3
Equalities	<p>Groups with 'protected characteristics' tend to be disproportionately affected by the negative effects of transport infrastructure, including from the physical and severance effects of transport corridors, effects on the quality of the public realm, and the effects of traffic and congestion on health and wellbeing. These groups are also disproportionately affected by accessibility issues.</p> <p>In this context, Option GO2, which seeks to 1) enhance accessibility by public transport and walking and cycling and 2) limit the impact of the private car on the built environment, including through demand management measures, will do more to support the needs of groups with protected characteristics.</p> <p>Whilst a significant expansion of transport capacity proposed through Option GO3 has the potential to support accessibility for certain groups, the option has some potential to impact on equalities groups through stimulating car use. This includes through impacting on the quality of local neighbourhoods and increasing severance issues. In addition, the option has increased potential to impact on the health and wellbeing of these groups through undermining air and noise quality and impacting on road safety. However, it should be noted that the benefits from the more significant interventions through this option, including with regards to the additional enhancements to the rail and Park and Ride network will help offset these potential impacts.</p> <p>With regard to Option GO1, a do minimum approach would do less to help address the key socio-economic and quality of life issues influenced by transport in Oxford and is less likely to address the transport and accessibility needs of groups with protected characteristics.</p>	3	2	1

## Market Towns

3.15 These options cover the larger market towns in Oxfordshire, including Banbury, Abingdon, Bicester, Witney and the Science Vale (comprising the grouping of Wantage, Grove, Didcot, Harwell, Milton and Culham).

3.16 Figures 3.5 to 3.7 highlight the key environmental constraints in these locations.

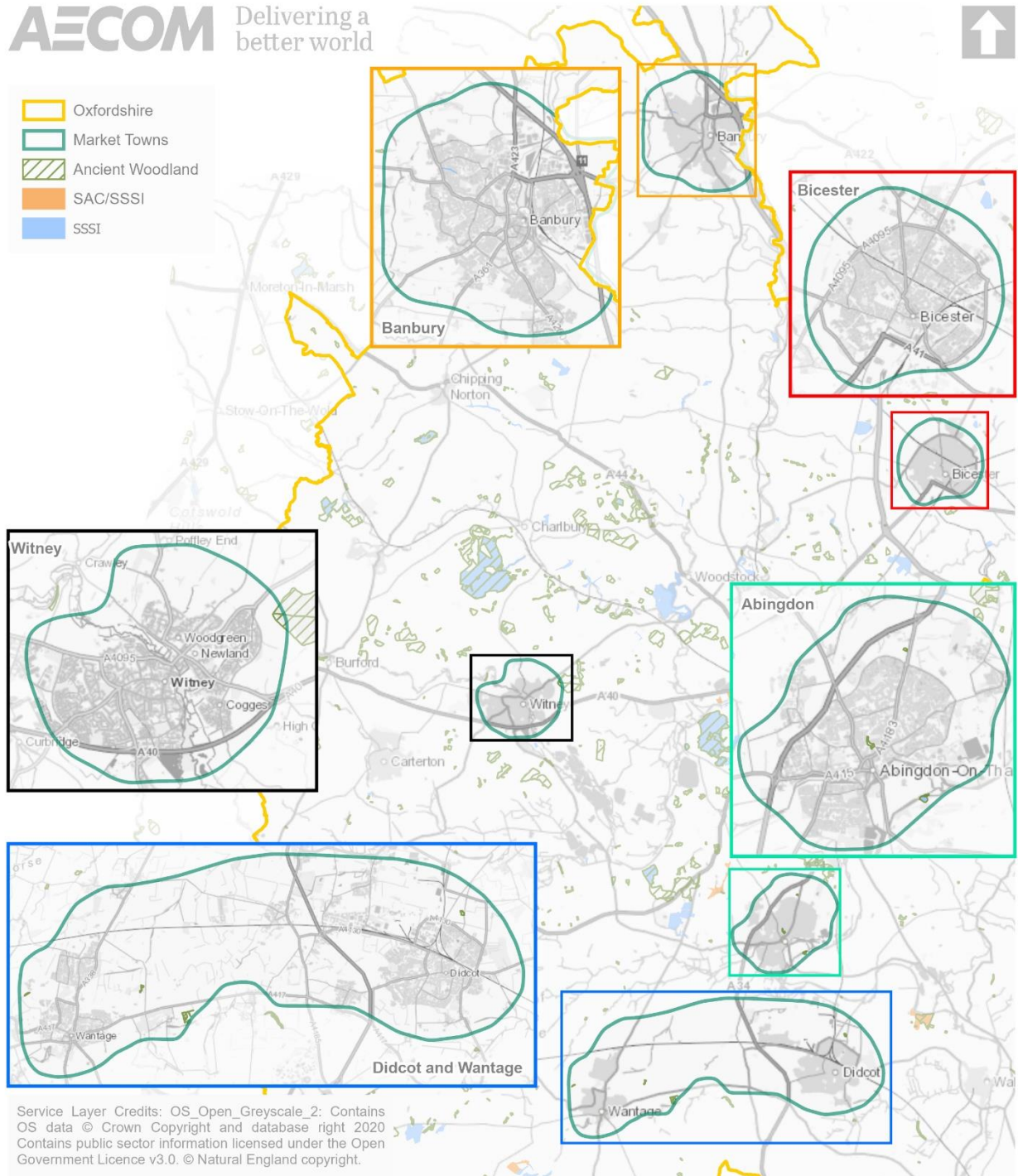
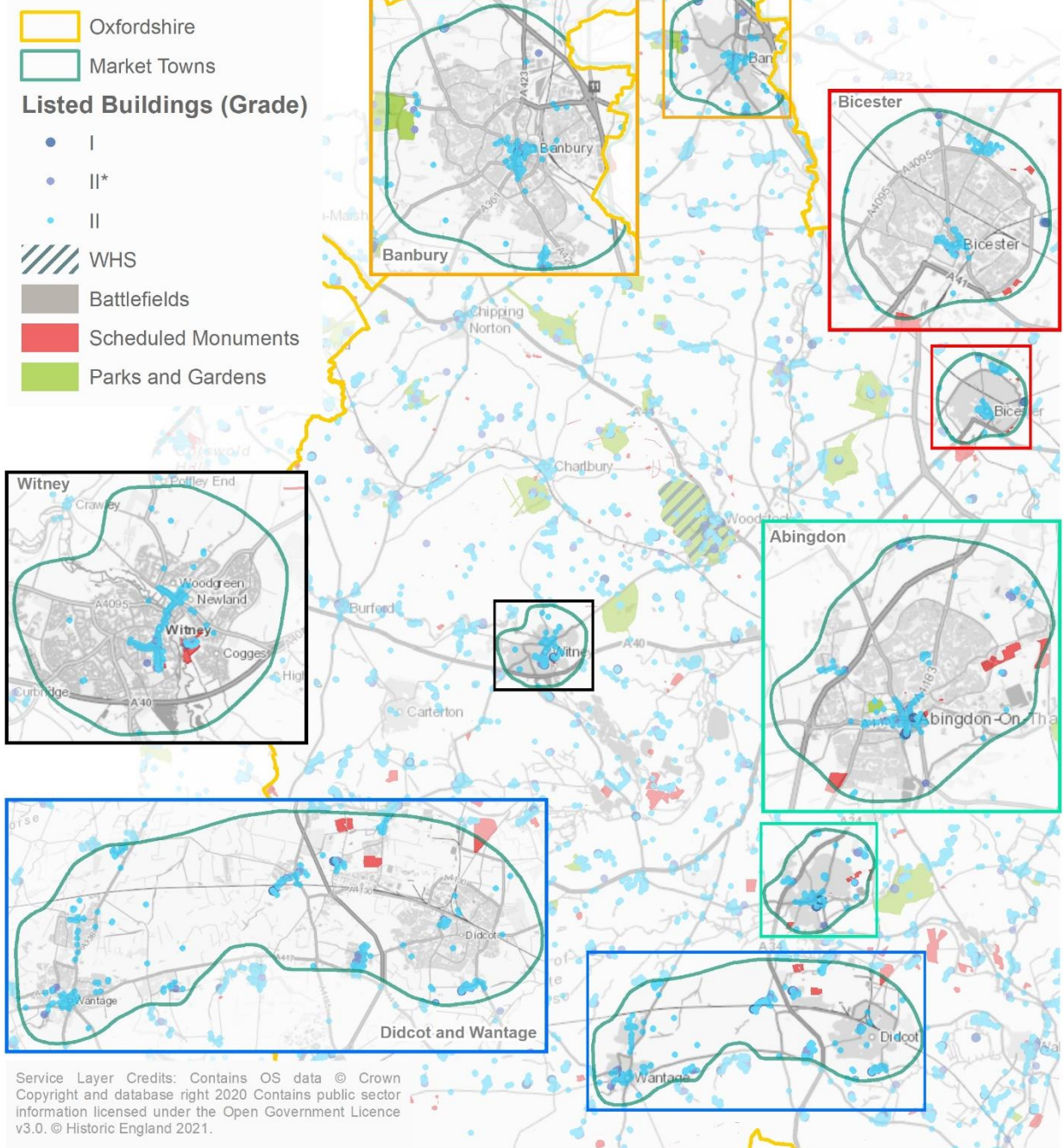
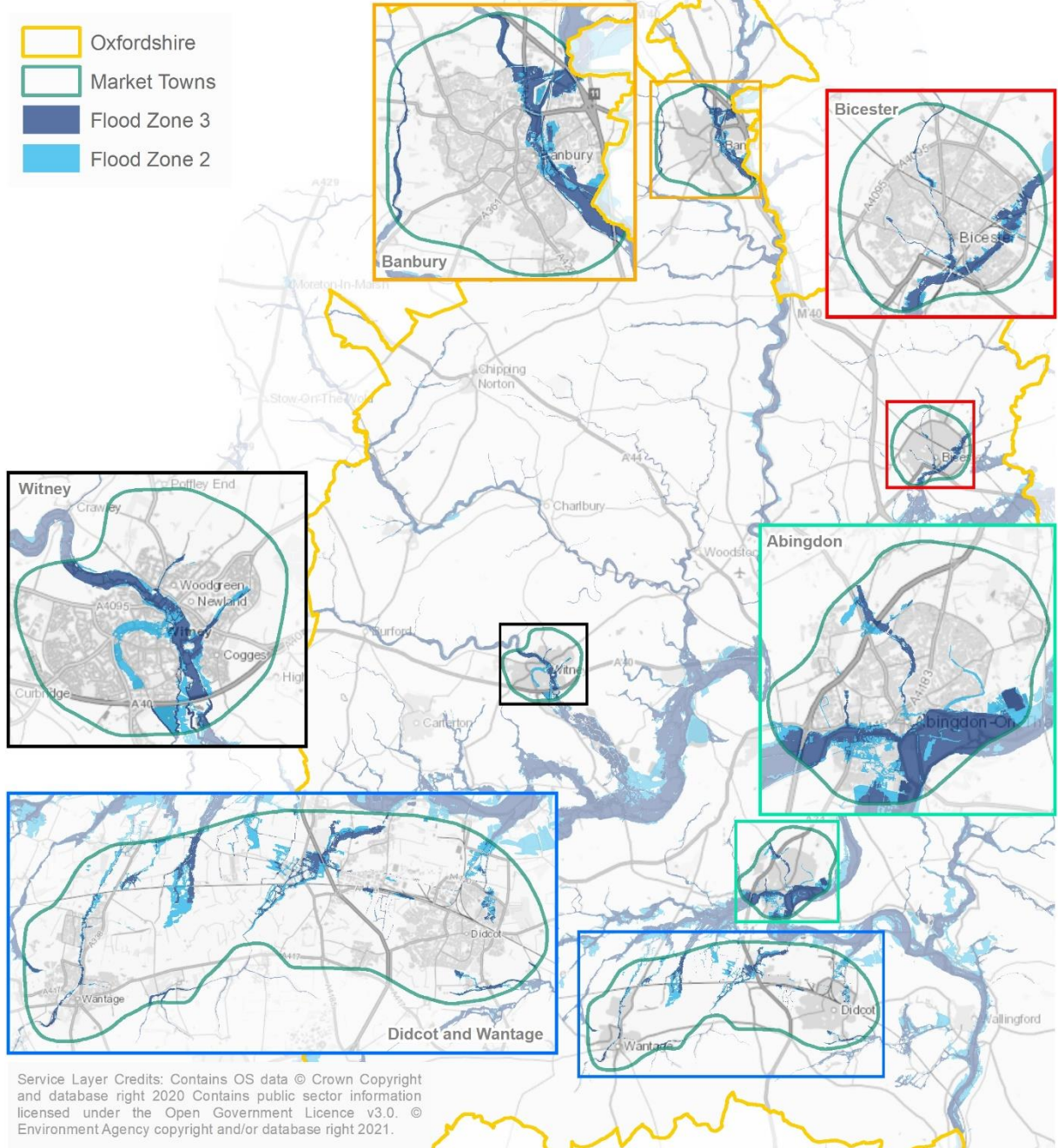


Figure 3.5: Biodiversity designations in the vicinity of Oxfordshire's market towns





**Figure 3.6 Historic environment designations in the vicinity of Oxfordshire’s market towns**



**Figure 3.7: Flood zones in the vicinity of Oxfordshire's market towns**

3.17 Three options have been considered as alternatives for the ISA, as follows.

## Option MT1: Do minimum

3.18 A do minimum option would rely on committed investment in transport infrastructure in the vicinity of the market towns, which would continue at a local and strategic level. In practice this would comprise road corridor/junction improvements and some public realm, active travel and public transport improvements.

## Option MT2: Optimise use of existing infrastructure

3.19 This option would seek to support Oxfordshire's market towns to make better use of existing transport networks. This includes through delivering measures such as enhancements to bus services, improved road maintenance regimes, electric charging infrastructure and enhanced walking and cycling links. The option would also seek to support the vitality of town centres and the visitor economy through high quality design and layout of transport infrastructure.

## Option MT3: Initiate more significant physical interventions

3.20 This would seek to deliver more significant physical interventions to the transport network, including new transport corridors (including link roads), and enhanced Park and Ride provision (which could play a role in some towns). It would also include larger active travel schemes, Low Traffic Neighbourhoods and Oxfordshire wide cycle network connections. It could also include the introduction of demand management measures and the delivery of mobility/transport hubs.

## Appraisal findings

3.21 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

3.22 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 3.2: Appraisal of options for Oxfordshire's market towns**

### Option MT1: Do minimum

### Option MT2: Optimise use of existing infrastructure

### Option MT3: Initiate more significant physical interventions

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		MT1	MT2	MT3
Biodiversity	<p>In terms of internationally and nationally designated sites present in the vicinity of the market towns, three of the market towns have small SSSIs located within or close to their urban areas. These are Neithrop Cutting SSSI (which is on the route of a former railway line in the north west of Banbury), Culham Brake (which is a small area of willow carr located by the River Thames east of Abingdon) and Ducklington Mead SSSI (which is located to the south east of Witney and comprises unimproved meadow situated between two arms of the River Windrush). Given their size, nature and location, these are not significant constraints in the context of the options being considered.</p> <p>All of the settlements have a range of important biodiversity habitats present locally, including BAP Priority Habitats, and also Local Wildlife Sites and Local Geological Sites.</p> <p>All three options have the potential to lead to effects on habitats and species without the implementation of appropriate avoidance and mitigation measures. However, Option MT2, which focuses on optimising the existing transport network rather than new physical infrastructure, would be least likely to lead to significant impacts on biodiversity</p>	2	1	3

**Option MT1: Do minimum**

**Option MT2: Optimise use of existing infrastructure**

**Option MT3: Initiate more significant physical interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		MT1	MT2	MT3
	<p>networks. Option MT3, through delivering a broader range of transport measures requiring new physical infrastructure and interventions, has the potential to lead to additional impacts on habitats and ecological networks in the vicinities of market towns. These are likely to be more far reaching than the current approach being taken forward through Option MT1. It should also be noted though that delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. In this context there is scope for transport infrastructure enhancements in the vicinities of the market towns to support environmental net gain locally. This includes through delivering enhancements in the numerous Network Enhancement Zones and Network Expansion Zones identified in the vicinities of the towns.</p>			
Water and Soil Resources	<p>In terms of impacts on land and soils resources, Option MT3 has the potential to lead to additional land take through the delivery of new more significant physical interventions to the transport network, including new transport corridors (including link roads), and enhanced Park and Ride provision (which could play a role in some towns). This has the potential to lead to land take on productive agricultural land, potentially leading to the loss of land classified as the best and most versatile agricultural land. Less significant effects are likely to take place from Option MT1, and through focussing on the existing transport network, Option MT2, would be least likely to lead to significant landtake on productive agricultural land.</p> <p>No significant impacts on water quality would be anticipated from schemes linked to the three options if the required embedded mitigation measures are incorporated within the construction and operational stage.</p>	2	1	3
Historic Environment	<p>Oxfordshire's market towns have a rich historic environment resource. This is highlighted by the presence of significant clusters of listed features in and around the towns and the presence of conservation areas in each of the settlements considered under these options.</p> <p>The significance of direct effects on the historic environment from the interventions taken forward through each option will depend on the design, layout and scale of the schemes, and mitigation and avoidance measures proposed.</p> <p>Options MT1 and MT3, through delivering new physical transport infrastructure, have the potential to have direct effects on the fabric and setting of features and areas of historic environment interest in and around Abingdon, Banbury, Bicester, Witney and the settlements in the Science Vale. Direct impacts from Option MT1, when compared to Option MT3, will however be limited by the significantly smaller scale of the new physical infrastructure likely to be taken forward through the option and the fact that much of it will be delivered through committed investment.</p> <p>Option MT2, whilst not delivering significant new physical infrastructure, has the potential to have impacts on existing transport corridors through initiating interventions which will optimise the network. The option however seeks to support the vitality of existing settlements through delivering high quality design and layout of transport infrastructure. In this respect the option has the potential to deliver well designed schemes which lead to enhancements to the public realm and the fabric and setting of the historic environment.</p> <p>In terms of indirect effects to the significance of historic environment assets, Option MT3 will do most to encourage car use. In this context, through initiating a range of measures which will stimulate traffic flows</p>	2	1	3

**Option MT1: Do minimum**

**Option MT2: Optimise use of existing infrastructure**

**Option MT3: Initiate more significant physical interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		MT1	MT2	MT3
	(such as the construction of new link roads and Park and Ride provision), the option has the potential to increase impacts on the fabric and setting of the historic environment. This includes through facilitating a release of induced demand on the road network. Option MT2, through initiating an increased focus on modal shift from the private car, will support the fabric and setting of the historic environment through a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic and congestion on the fabric and setting of historic environment assets. In this respect a 'do minimum' approach taken forward through Option MT1 has more limited potential to bring similar benefits.			
Landscape	<p>The North Wessex Downs AONB is located to the south of Didcot and Wantage. Witney is also located 2km south east of the Cotswolds AONB. Whilst no nationally designated landscapes are located within the immediate vicinities of the other market towns, the hinterland of each of the towns have a distinctive landscape character which is valued by residents and visitors alike. In addition, the towns have a distinctive townscape, as highlighted by the presence of conservation areas in many parts of the towns.</p> <p>Options MT1 and MT3, through delivering new physical transport infrastructure, has the potential to have direct effects on landscape character around Abingdon, Banbury, Bicester, Witney and the settlements in the Science Vale. This includes on the special qualities of the North Wessex Downs AONB in the vicinity of the Science Vale. Direct impacts from Option MT1, when compared to Option MT3, will however be limited by the significantly smaller scale of the new physical infrastructure likely to be taken forward through the option and the fact that much of it will be delivered through committed investment. Option MT2, whilst not delivering significant new physical infrastructure, has the potential to have impacts on existing transport corridors through initiating interventions which will optimise the network. The option however seeks to support the vitality of existing settlements through delivering high quality design and layout of transport infrastructure. In this respect the option has the potential to deliver well designed schemes which support townscape character.</p> <p>In terms of indirect effects to landscape character, Option MT3 will do most to encourage car use. In this context, through initiating a range of measures which will stimulate traffic flows (such as the construction of new link roads and Park and Ride provision), the option has the potential to increase impacts on landscape and townscape character through visual and noise impacts. This includes through facilitating a release of induced demand on the road network. Option MT2, through initiating an increased focus on modal shift from the private car, will support landscape character through a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic and congestion landscape character. In this respect a 'do minimum' approach taken forward through Option MT1 has more limited potential to bring similar benefits.</p>	2	1	3
Air Quality and Noise	<p>AQMAs are present in the following settlements considered under these options: Abingdon, Bicester and Badbury and Witney.</p> <p>Of the options, Option MT3 will do most to encourage car use. In this context, through initiating a range of measures which will stimulate traffic flows (such as the construction of new link roads and Park and Ride provision), the option has the potential to increase emissions from</p>	2	1	3

**Option MT1: Do minimum**  
**Option MT2: Optimise use of existing infrastructure**  
**Option MT3: Initiate more significant physical interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		MT1	MT2	MT3
	transport which affect air quality. This includes through facilitating a release of induced demand on the road network. The option also has the most potential to lead to significant negative effects on noise quality. Option MT2, through initiating an increased focus on modal shift from the private car, will support air and noise quality through a limitation in traffic flows and improved traffic management. In this respect Option MT2 will do more than Option MT1 to support air quality (and noise quality) at hotspots. This includes through delivering a more comprehensive package of schemes which supports modal shift from the private car to public transport and walking and cycling.			
Climate Change	<p>Of the options, Option MT3 will do most to encourage car use. In this context, through initiating a range of measures which will stimulate traffic flows (such as the construction of new link roads and Park and Ride provision), the option has the potential to increase greenhouse gas emissions from transport. This includes through facilitating a release of induced demand on the road network.</p> <p>Option MT2, through initiating an increased focus on modal shift from the private car, will support a limitation of emissions through a limitation in traffic flows and improved traffic management. In this respect Option MT2 will do more than Option MT1 to support a reduction of emissions. This includes through delivering a more comprehensive package of schemes which supports modal shift from the private car to public transport and walking and cycling.</p> <p>In terms of adapting to the effects of climate change, the effect of initiatives taken forward through the options depend on detailed interventions, including scheme design and layout, the integration of green infrastructure provision and other measures to help regulate the effects of extreme weather events. Similarly, the effect of initiatives on fluvial, surface water and groundwater flooding depend on scheme design considerations, including design and layout and the implementation of measures such as sustainable drainage systems.</p>	2	1	3
Healthy and Safe Communities	<p>Option MT2, through delivering additional packages of schemes with a focus on public transport and active travel enhancements, will support social inclusion and community vitality. The option also has the potential to contribute to the quality of life of residents through limiting the impact of traffic and congestion on neighbourhoods and on severance issues. In this respect a do minimum approach promoted through Option MT1 would do less to help address some of the key accessibility issues seen in the vicinities of market towns, including from their surrounding hinterlands. This includes relating to the lack of choices relating to public transport, its affordability and reliability (including during off peak times), and existing pressures on the road network.</p> <p>In addition to increasing travel choice through initiating additional packages of enhancements, Option MT2 has the potential to support the economic vitality of market towns through enhancing connections with the strategic and local transport network. Option MT3, through facilitating a wider range of transport interventions, including new transport corridors, enhanced Park and Ride provision, larger scale active travel schemes, Oxfordshire wide cycle network connections and the delivery of mobility/transport hubs also will support community and economic vitality. In terms of health and wellbeing Option MT2 has increased potential to support modal shift from the private car. This will support healthier modes of travel, including through encouraging active travel modes such as</p>	3	1	2

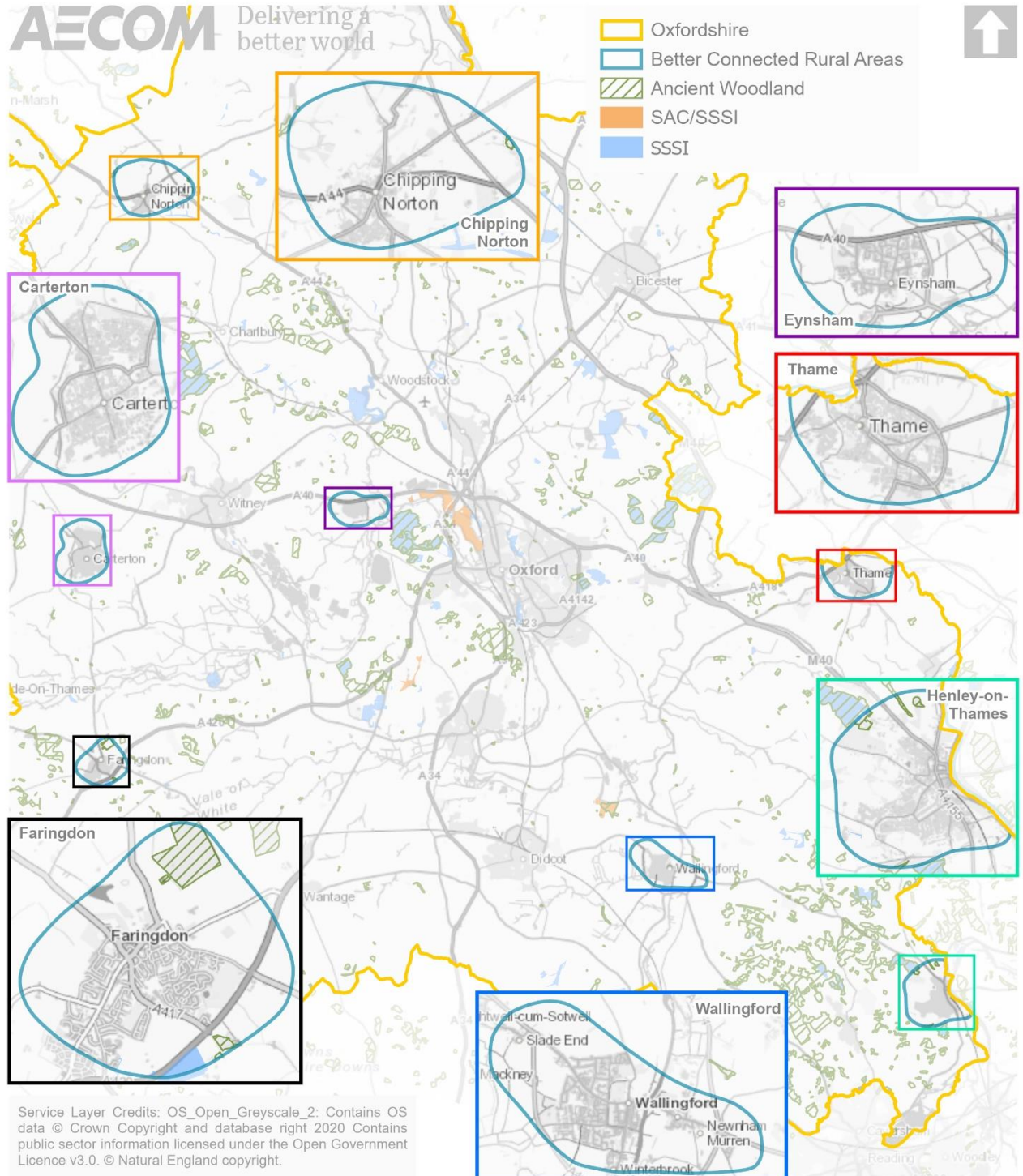
**Option MT1: Do minimum**  
**Option MT2: Optimise use of existing infrastructure**  
**Option MT3: Initiate more significant physical interventions**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		MT1	MT2	MT3
	walking and cycling. Through promoting modal shift, the option also offers the potential to support air and noise quality enhancements and enhancements to the quality of the public realm. This will support the health and wellbeing of residents. Option MT1, through initiating a do minimum approach, has less potential to address the transport issues which adversely affect health and wellbeing in market towns. However, Option MT3, through initiating a wider range of physical infrastructure measures, including road capacity enhancements, has the potential to increase traffic flows and congestion. This has the potential to increase impacts on air and noise quality, and increase road safety and quality of life issues for residents.			
Equalities	<p>Groups with 'protected characteristics' tend to be disproportionately affected by the negative effects of transport infrastructure, including from the physical and severance effects of transport corridors, effects on the quality of the public realm, and the effects of traffic and congestion on health and wellbeing. These groups are also disproportionately affected by accessibility issues.</p> <p>Option MT3 is likely to deliver a comprehensive package of measures for market towns which will deliver travel choice, improve connectivity by all modes of transport and support accessibility. Whilst a significant expansion of transport capacity proposed through Option MT3 has the potential to support accessibility for certain groups, the option has some potential to impact on equalities groups through stimulating car use. This includes through impacting on the quality of local neighbourhoods and increasing severance issues. In addition, the option has increased potential to impact on the health and wellbeing of these groups through undermining air and noise quality and impacting on road safety. However, it should be noted that the benefits from the more significant interventions through this option, including with regards to an expansion of active travel networks, will help offset these potential impacts.</p> <p>With regard to Option MT1, a do minimum approach which relies largely on existing commitments would do less to help address the key socio-economic and quality of life issues influenced by transport in market towns and is less likely to address the transport and accessibility needs of groups with protected characteristics. In this context, Option MT2, which seeks to 1) enhance accessibility by public transport and walking and cycling and 2) limit the impact of the private car on the built environment and secure enhancements to the quality of the public realm, will do more to support the needs of groups with protected characteristics.</p>	3	2	1

## Better-connected rural areas

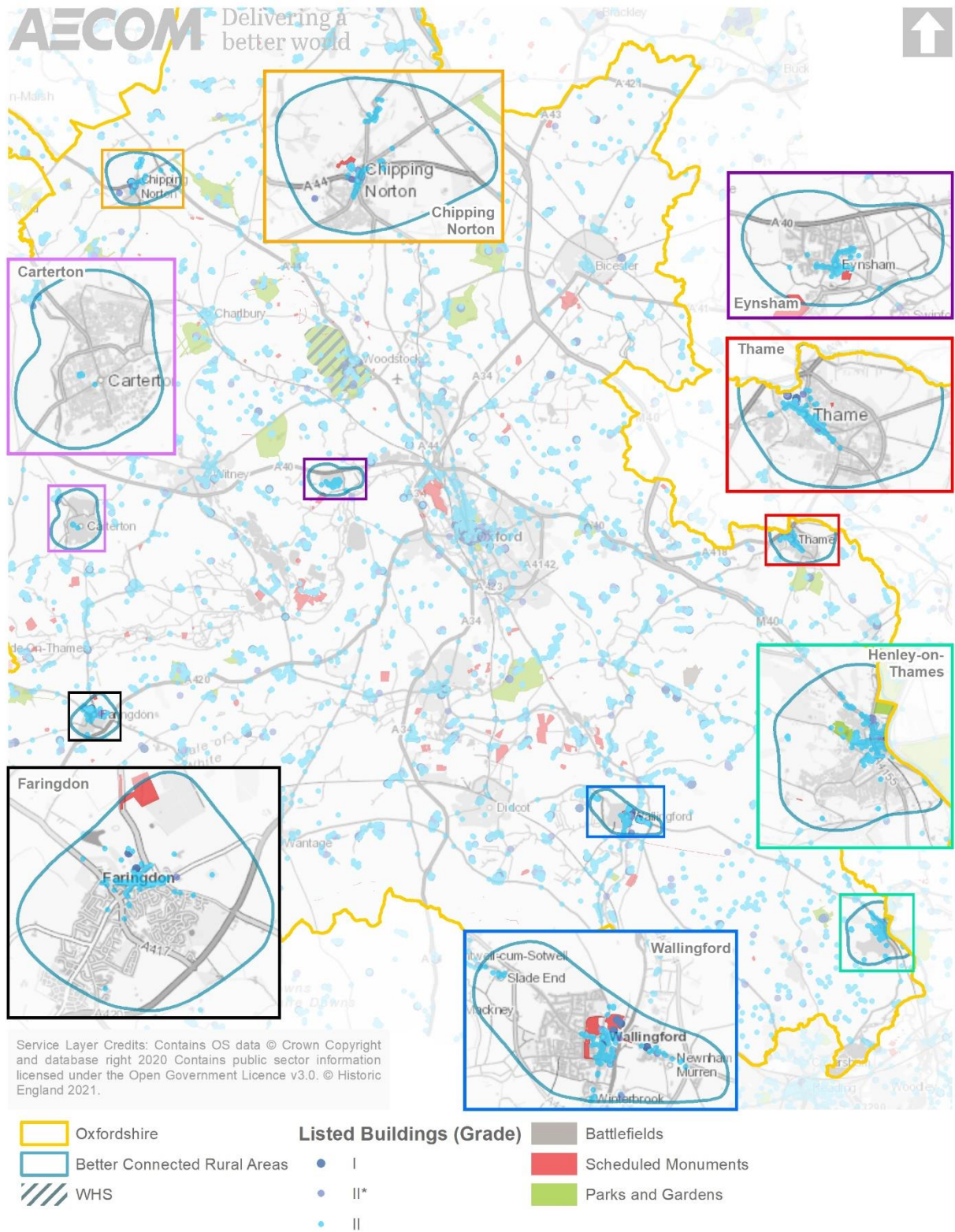
3.23 These options cover the better-connected rural areas in Oxfordshire, focusing on Carterton, Eynsham, Henley, Wallingford, Thame, Faringdon and Chipping Norton.

3.24 **Figures 3.8 to 3.10** highlight the key environmental constraints in these areas.

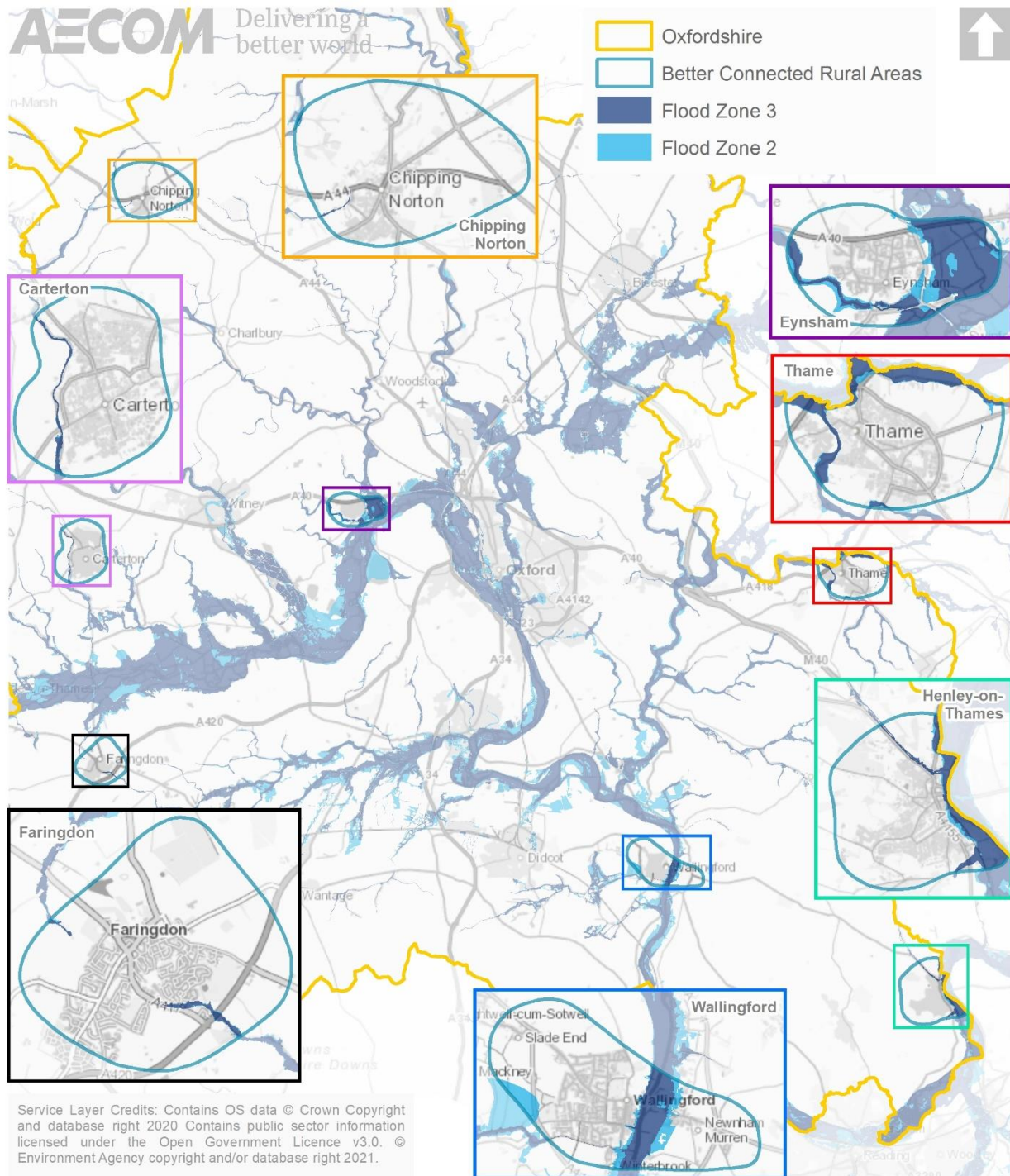


**Figure 3.8: Biodiversity designations in the vicinity of better-connected rural areas**





**Figure 3.9: Historic environment designations in the vicinity of better-connected rural areas**



**Figure 3.10: Flood zones in the vicinity of better-connected rural areas**

3.25 Three options have been considered as alternatives for the ISA, as follows.

### Option BR1: Do minimum

3.26 A do minimum option would rely on committed investment in transport infrastructure, which would continue at a local and strategic level. In practice this would mean minor junction improvements and some minor active travel improvements. A new Park and Ride would continue to be delivered at Eynsham.

## Option BR2: Optimise use of existing infrastructure

3.27 This option would seek to support more accessible rural areas through making better use of existing transport networks. This includes through delivering measures such as enhancements to bus services, enhanced walking and cycling links, provision of car clubs, improved maintenance regimes and electric charging infrastructure.

## Option BR3: Initiate more significant interventions, including with regards to multimodal interchange

3.28 This option would seek to enhance multi-modal interchanges serving rural areas, including through the delivery of new Park and Ride facilities, additional car parking provision at key transport nodes and new walking and cycle links.

## Appraisal findings

3.29 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

3.30 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 3.3: Appraisal of options for Oxfordshire's better-connected rural areas**

**Option BR1: Do minimum**

**Option BR2: Optimise use of existing infrastructure**

**Option BR3: Initiate more significant physical interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		BR1	BR2	BR3
Biodiversity	<p>In terms of internationally and nationally designated sites present in the vicinity of the areas identified as better-connected rural areas, two of the settlements are located in the immediate vicinity of national designated sites. In this context Henley-on-Thames is located close to four SSSIs, namely Temple Island Meadows SSSI, Lambridge Wood SSSI, Harpsden Wood SSSI and Highlands Farm Pit, and Faringdon is located across from the A420 from the Wicklesham and Coxwell Pits SSSI</p> <p>All of the settlements have a range of important biodiversity habitats present locally, including BAP Priority Habitats, and also Local Wildlife Sites and Local Geological Sites.</p> <p>Option BR3, through initiating more significant transport interventions, including Park &amp; Ride facilities and new car parking provision, has increased potential to lead to significant effects on biodiversity habitats, species and networks. This includes from land take, habitat loss and fragmentation and disturbance. In this respect Option BR1, which relies on committed investment, and Option BR2, which focuses on enhancing existing transport infrastructure with limited physical interventions would lead to fewer physical impacts on key areas of sensitivity.</p> <p>It should also be noted that the delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. For example, the Government's 25-year Environment Plan seeks to embed an environmental net gain principle for infrastructure development. In this context there is scope for the delivery of new transport infrastructure to support environmental net gain in rural areas. This includes through delivering enhancements in the Network Enhancement</p>	1	2	3

**Option BR1: Do minimum**

**Option BR2: Optimise use of existing infrastructure**

**Option BR3: Initiate more significant physical interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		BR1	BR2	BR3
	Zones <sup>6</sup> and Network Expansion Zones <sup>7</sup> identified in many rural areas of Oxfordshire by Natural England.			
Water and Soil Resources	<p>Option BR3, through facilitating the delivery of additional new physical transport infrastructure (including Park &amp; Ride sites), will require increased landtake than Option BR1 and BR2. This has increased potential to lead to the development of previously undeveloped land, including potentially productive land classified as the best and most versatile agricultural land.</p> <p>Without mitigation measures, additional delivery of new transport infrastructure such as Park &amp; Ride sites has the potential to have impacts on water and soil quality through increases in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage.</p>	1	1	3
Historic Environment	<p>The parts of Oxfordshire identified as better-connected rural areas have a rich historic environment.</p> <p>The increased number of physical transport infrastructure schemes likely to be initiated through Option BR3 have the potential to lead to impacts on the key assets (including designated features and areas) located in the vicinity of the locations targeted for interventions. The significance of effects from these interventions will however depend on design, layout and scale of the schemes, and mitigation and avoidance measures proposed.</p> <p>It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and the setting of the historic environment. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm, with benefits for the setting of the historic environment.</p> <p>In relation to Option BR2, an approach which focuses to a greater degree on soft measures, technological solutions and optimising the existing network is less likely to lead to direct adverse impacts on the historic environment and historic landscape/townscape character. The setting of the historic environment also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the setting of historic environment assets. In this respect a 'do minimum' approach taken forward through Option BR1 has more limited potential to bring similar benefits.</p>	2	1	3
Landscape	<p>In terms of the locations considered under these options, Chipping Norton is within and Carterton is located 1.75km from the Cotswolds AONB, Henley-on-Thames and Wallingford are located adjacent to the Chilterns AONB, and Wallingford is adjacent to the North Wessex Downs AONB.</p> <p>In this respect Option BR3, through facilitating the delivery of additional transport infrastructure, including Park &amp; Ride, in the vicinity of these settlements has additional potential to lead to impacts on the special qualities of the AONBs present locally. This includes through the loss of features of landscape value, impacts on local distinctiveness and effects on tranquillity. Options BR1 and BR2, through focusing less on the delivery of physical infrastructure enhancements, are unlikely to deliver</p>	2	1	3

<sup>6</sup> Network Enhancement Zones comprise land within close proximity to existing habitat components that have been identified by Natural England as likely to be suitable for habitat re-creation for the particular habitat.

<sup>7</sup> Network Expansion Zones are areas identified with potential for expanding, linking and joining biodiversity networks.

**Option BR1: Do minimum**

**Option BR2: Optimise use of existing infrastructure**

**Option BR3: Initiate more significant physical interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		BR1	BR2	BR3
	<p>transport initiatives which have significant impacts on these nationally designated landscapes, or more broadly, landscape character.</p> <p>The significance of effects from schemes initiated by Option BR3 would however depend on the design, layout and scale of the schemes, and the mitigation and avoidance measures proposed. It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and local character. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm.</p> <p>With regards to Option BR2, an approach which focuses to a greater degree on soft measures, technological solutions and active travel is less likely to lead to direct adverse impacts on landscape character. Local character also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on landscape character. In this respect a 'do minimum' approach taken forward through Option BR1 has less potential to initiate measures which bring these benefits.</p>			
Air Quality and Noise	<p>Air quality is an issue for some of the settlements considered under these options. This includes Chipping Norton, Henley-on-Thames, Wallingford, where AQMAs have been declared for emissions of nitrogen dioxide.</p> <p>In addition, noise quality is an important issue for some rural areas.</p> <p>Options BR2 and BR3 will do more though than Option BR1 to deliver packages of schemes which supports modal shift from the private car to public transport and walking and cycling, with benefits for noise and air quality.</p> <p>Option BR3, through introducing new Park &amp; Ride provision at some locations, may however increase noise and air quality issues at locations closer to such facilities. In addition, Option BR2, through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, may do more to reduce the need to travel for key services and facilities. This will support noise and air quality.</p>	2	1	3
Climate Change	<p>Option BR2 has a close focus on technical solutions to transport challenges. Through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, the option will support a reduction of the need to travel to key services, facilities and opportunities. The option also has a focus on smart travel, community transport, provision of car clubs and improvements to electric charging infrastructure. In this context, the option will initiate a range of approaches which will help limit greenhouse gas emissions from transport.</p> <p>Option BR3, as part of its proposed package of interventions, seeks to deliver enhanced multimodal interchange, including new Park &amp; Ride provision and parking provision. The overall effect of these interventions on greenhouse gas emissions is uncertain. Whilst Park &amp; Ride provision will support modal shift for at least part of users' journey, it also has the potential to encourage car use. However, this option recognises that car travel will remain the predominant choice for many living in rural areas, and such provision has the potential to support modal shift for at least part of the journey. In this respect the detailed location and design of such multi-modal provision should be carefully considered to ensure that newly generated trips are limited, and benefits maximised.</p>	2	1	3

**Option BR1: Do minimum**

**Option BR2: Optimise use of existing infrastructure**

**Option BR3: Initiate more significant physical interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		BR1	BR2	BR3

Option BR1 will do less to initiate interventions which will limit greenhouse gas emissions from transport in rural areas. This is given it relies on committed investment in transport infrastructure.

As such, Option BR2, through combining an approach which seeks to limit the need to travel, promote modal shift from the private car, whilst supporting the decarbonisation of private travel, will do the most of the options to support climate change mitigation in rural areas through limiting greenhouse gas emissions from transport.

In terms of adapting to the effects of climate change, the effect of initiatives taken forward through the options depend on detailed interventions, including scheme design and layout, the integration of green infrastructure provision and other measures to help regulate the effects of extreme weather events. Similarly, the effect of initiatives on fluvial, surface water and groundwater flooding depend on scheme design considerations, including design and layout and the implementation of measures such as sustainable drainage systems.

Healthy and Safe Communities

A 'do minimum' approach relying on existing commitments promoted through Option BR1 would do the least of the options to address the key socio-economic and quality of life issues influenced by transport in rural areas. In this context a range of issues are less likely to be addressed without appropriate interventions, including accessibility issues, the useability and affordability of public transport, and social exclusion. Option BR2, through seeking to support rural bus services, promoting smart travel / 'on demand' community transport, and provision of car clubs, will help support accessibility for those without access to a private car. In addition, through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, the option will support a reduction of the need to travel to key services, facilities and opportunities, with benefits for social inclusion. Option BR3 recognises that car use will remain a key choice for many in rural areas through seeking to enhance multimodal interchange, including potentially through Park & Ride. This will support accessibility for those with access to private transport. Options BR2 and BR3 will therefore both bring benefits for the quality of life of rural residents. In this context a mixture of the schemes taken forward through these options would be likely to deliver most benefits for those living in rural areas. In addition to increasing travel choice, Options BR2 and BR3 have the potential to support economic vitality through enhancing connections to key services, facilities and employment opportunities and supporting the visitor economy. Option BR2 will also support the diversification of the rural economy through enhancing digital connectivity in rural areas. Health and wellbeing are closely linked to deprivation issues. In this context deprivation in rural areas is directly influenced by accessibility and social exclusion issues. This is highlighted by the higher levels of deprivation seen in rural areas relating to the 'Barriers to Housing and Services' domain. In this respect Options BR2 and BR3 will do more to deliver accessibility enhancements which will help limit deprivation in rural areas. Option BR1, through initiating a do minimum approach, has the least potential to address the transport issues which adversely affect health and wellbeing in rural areas.

**Option BR1: Do minimum**

**Option BR2: Optimise use of existing infrastructure**

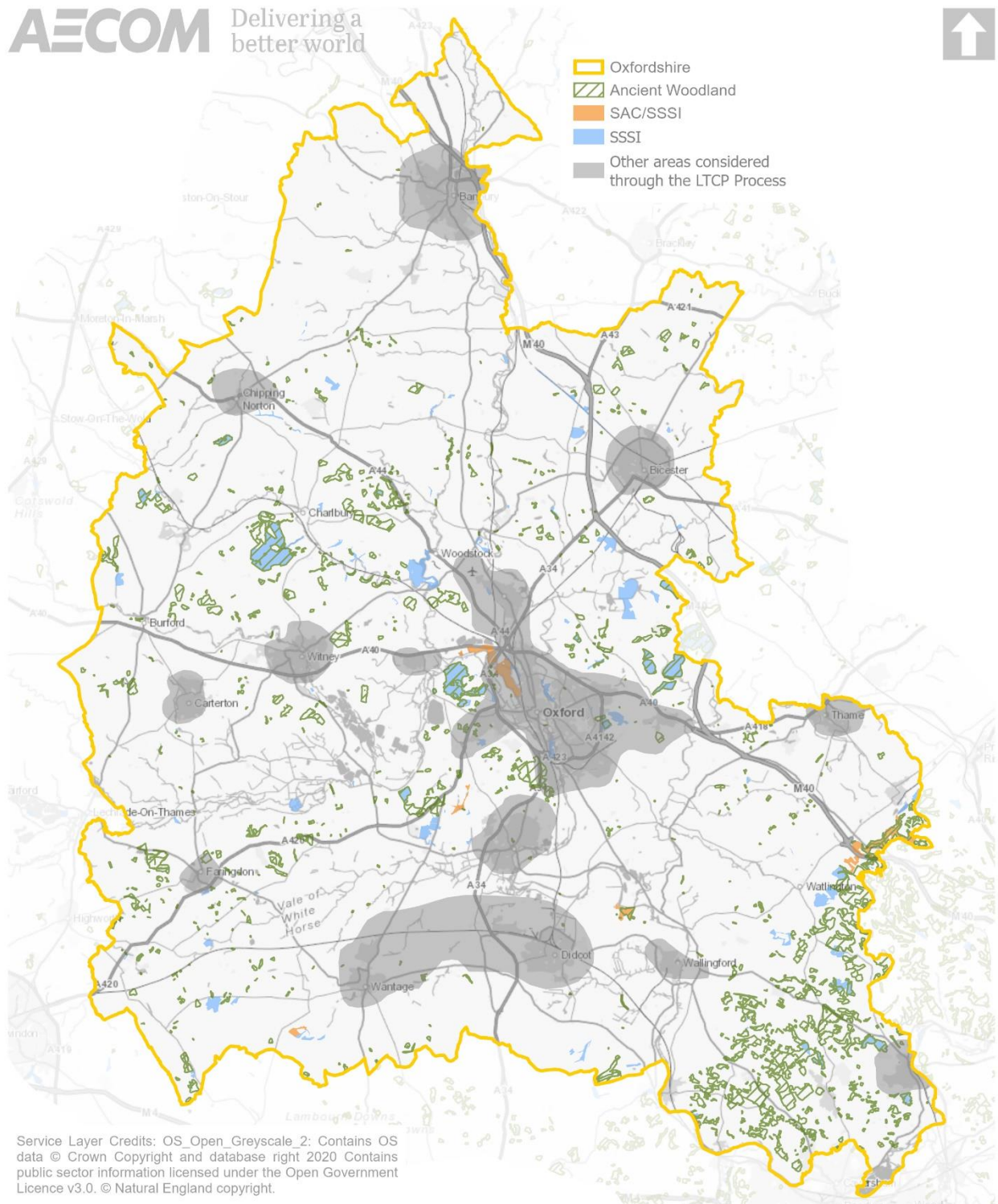
**Option BR3: Initiate more significant physical interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		BR1	BR2	BR3
Equalities	<p>In rural areas, groups with ‘protected characteristics’ tend to be disproportionately affected by accessibility issues. For those lacking their own transport, including the young, the elderly, and those with mobility issues, access to services and facilities is a significant challenge. These groups are often the least able to afford high costs of public transport and research shows that, on average, people on lower incomes in rural areas pay a higher proportion of their income on travel costs.</p> <p>In this respect Options BR2 and BR3 will do more to deliver accessibility enhancements which will support the needs of equalities groups in the better-connected rural areas of Oxfordshire. Option BR2, through supporting rural bus services and providing an additional impetus on smart travel / ‘on demand’ community transport will help enhance accessibility to those groups without access to a private car.</p> <p>Communications enhancements, including to broadband and mobile phone infrastructure will also help overcome some of the barriers to accessing services and facilities for those with protected characteristics. Option BR3 recognises that car use will remain the predominant and necessary choice for many of those with protected characteristics in rural areas through seeking to enhance multimodal interchange, including potentially through Park &amp; Ride. This will support accessibility for those with access to private transport.</p> <p>Option BR1, through initiating a do minimum approach, has the least potential to enhance accessibility for those groups with protected characteristics in the rural areas in Oxfordshire.</p>	3	2	1

## Less well-connected rural areas

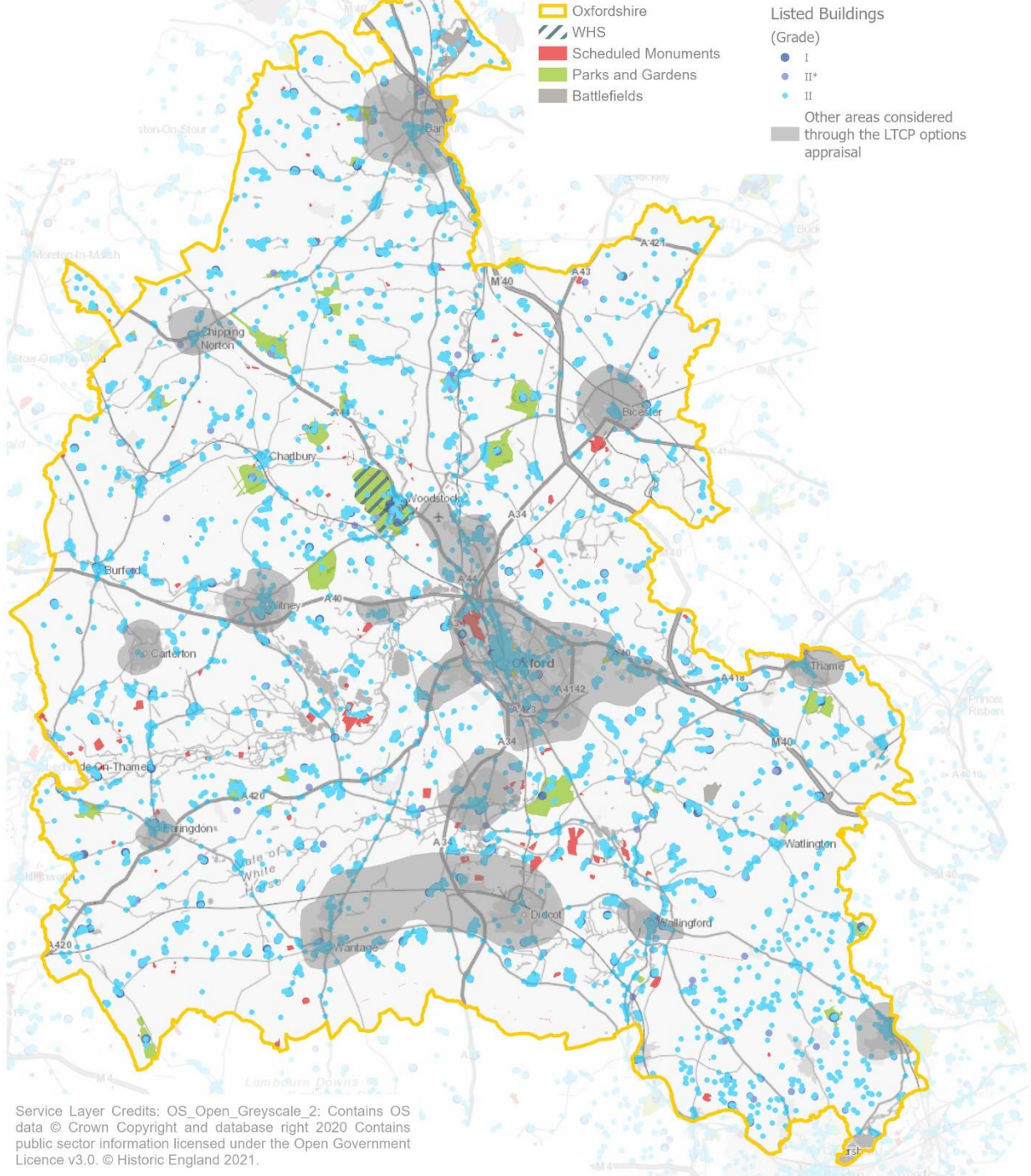
3.31 These options cover the less well-connected rural areas in Oxfordshire, incorporating the rural hinterland of the county and smaller towns. These include Burford, Woodstock, Shrivenham, Kingston Bagpuize, Watlington, Chinnor, Chalgrove, Deddington, Kirtlington, and Upper Heyford.

3.32 **Figures 3.11 to 3.13** highlight the key environmental constraints in these areas.

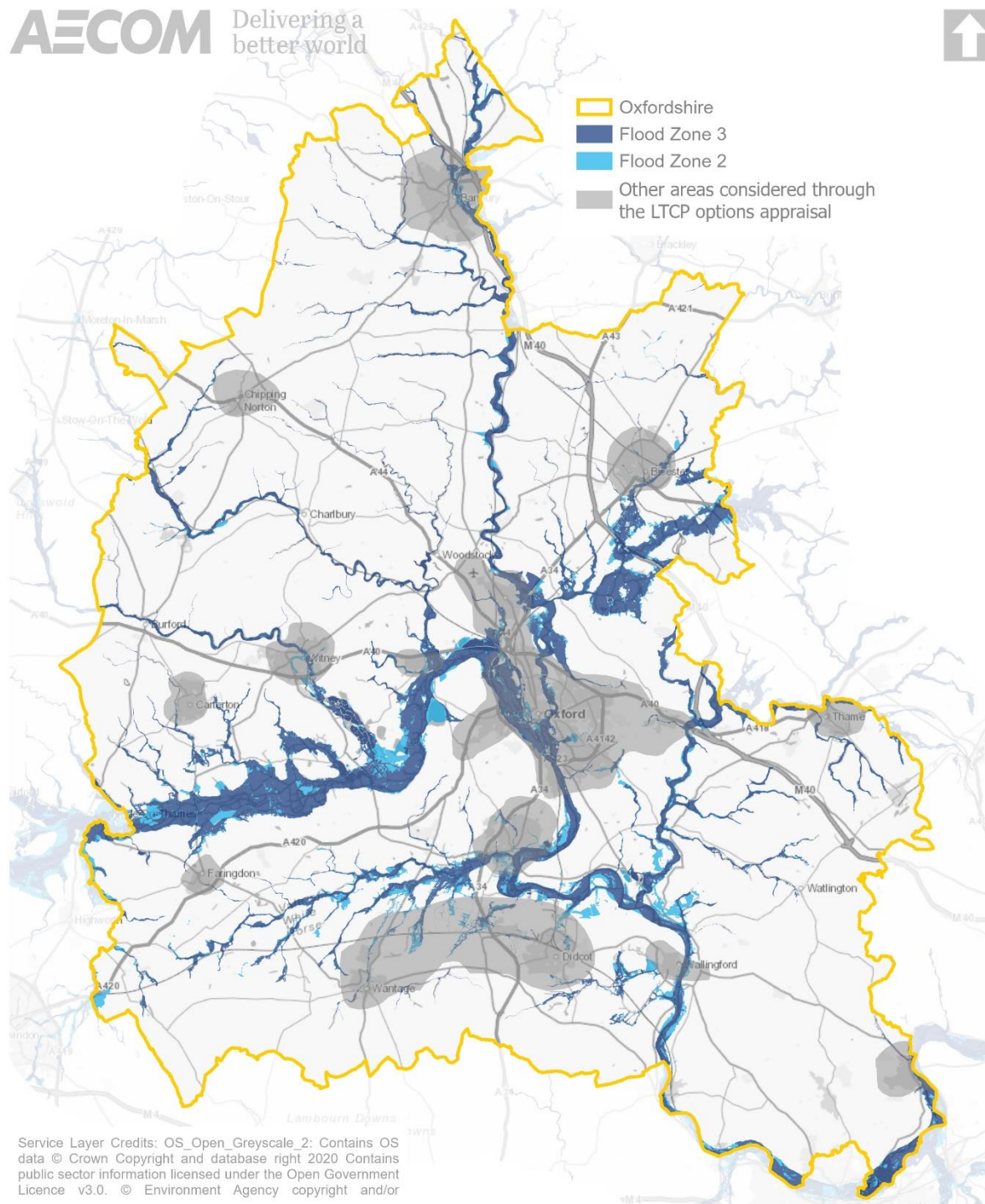


**Figure 3.11: Biodiversity designations in the vicinity of less well-connected rural areas**





**Figure 3.12: Historic environment designations in the vicinity of less well-connected rural areas**



**Figure 3.13: Flood zones in the vicinity of less well-connected rural areas**

3.33 Three options have been considered as alternatives for the ISA, as follows.

### Option LR1: Do minimum

3.34 A do minimum option would rely on committed investment in transport infrastructure, which would continue at a local and strategic level. In practice this would mean some minor active travel, public transport or road improvements. A number of larger schemes have also been proposed linked to new development, for example in the vicinity of Chalgrove.

## Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas

3.35 This option would seek to make best use of existing infrastructure. It would include measures such as supporting rural bus services, providing an additional impetus on smart travel / 'on demand' community transport, provision of car clubs, communications enhancements (including broadband and mobile phone infrastructure improvements) and improvements to electric charging infrastructure.

## Option LR3: Initiate more significant interventions, including with regards to multimodal interchange

3.36 This option would seek to enhance multi-modal interchanges serving rural areas, including through the delivery of new Park and Ride facilities, and additional car parking provision, including at key sub-regional transport nodes. This could also include the development of a countywide walking and cycling network.

## Appraisal findings

3.37 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

3.38 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 3.4: Appraisal of options for Oxfordshire's less well-connected rural areas**

### Option LR1: Do minimum

### Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas

### Option LR3: Initiate more significant interventions, including with regards to multimodal interchange

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		LR1	LR2	LR3
Biodiversity	<p>The rural areas of Oxfordshire have a significant number of internationally designated sites, including SACs, SPAs and Ramsar sites, and nationally designated sites including SSSIs and National Nature Reserves. These cover a range of internationally and nationally significant habitats and form important components of regional and national ecological networks. In addition, there are numerous areas of biodiversity value which are not covered by statutory designations, which hold a range of important habitats and protected species.</p> <p>Option LR3, through initiating more significant transport interventions, including Park &amp; Ride facilities and new car parking provision, has increased potential to lead to significant effects on biodiversity habitats, species and networks. This includes from land take, habitat loss and fragmentation and disturbance. In this respect Option LR1, which relies on committed investment, and Option LR2, which focuses on enhancing existing transport infrastructure with limited physical interventions would lead to fewer physical impacts on key areas of sensitivity.</p> <p>It should also be noted that the delivery of new and enhanced transport infrastructure may support some enhancements to biodiversity networks. For example, the Government's 25-year Environment Plan seeks to embed an environment net gain principle for infrastructure development. In this context there is scope for the delivery of new transport infrastructure to support environmental net gain in rural areas. This includes through delivering enhancements in the Network Enhancement</p>	1	2	3

**Option LR1: Do minimum**

**Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas**

**Option LR3: Initiate more significant interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		LR1	LR2	LR3
	Zones <sup>8</sup> and Network Expansion Zones <sup>9</sup> identified in many rural areas of Oxfordshire by Natural England.			
Water and Soil Resources	<p>Option LR3, through facilitating the delivery of additional new physical transport infrastructure (including Park &amp; Ride sites), will require increased landtake than Option LR1 and LR2. This has increased potential to lead to the development of previously undeveloped land, including potentially productive land classified as the best and most versatile agricultural land.</p> <p>Without mitigation measures, additional delivery of new transport infrastructure such as Park &amp; Ride sites has the potential to have impacts on water and soil quality through increases in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage.</p>	1=	1=	3
Historic Environment	<p>The rural areas of Oxfordshire have a rich historic environment. This is accompanied by distinctive historic landscapes, including within the three AONBs designated in the county.</p> <p>The increased number of physical transport infrastructure schemes likely to be initiated through Option LR3 have the potential to lead to impacts on the key assets (including designated features and areas) located in the vicinity of the locations targeted for interventions. The significance of effects from these interventions will however depend on design, layout and scale of the schemes, and mitigation and avoidance measures proposed.</p> <p>It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and the setting of the historic environment. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm, with benefits for the setting of the historic environment.</p> <p>In relation to Option LR2, an approach which focuses to a greater degree on soft measures, technological solutions and demand management measures is less likely to lead to direct adverse impacts on the historic environment and historic landscape/townscape character. The setting of the historic environment also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the setting of historic environment assets. In this respect a 'do minimum' approach taken forward through Option LR1 has reduced potential to bring similar benefits.</p>	2	1	3
Landscape	The landscapes of the rural areas of Oxfordshire are attractive and diverse. In this respect, the Oxfordshire Wildlife and Landscape Study identifies 24 separate landscape types within the county, made up of individual landscape description units with a similar pattern of geology, topography, land use and settlements. The value of the landscape is recognised by the presence of the nationally designated landscapes of the North Wessex Downs AONB covering part of the south of Oxfordshire, the Chilterns AONB covering part of south eastern Oxfordshire and the Cotswolds AONB covering the north western part of Oxfordshire.	2	1	3

<sup>8</sup> Network Enhancement Zones comprise land within close proximity to existing habitat components that have been identified by Natural England as likely to be suitable for habitat re-creation for the particular habitat.

<sup>9</sup> Network Expansion Zones are areas identified with potential for expanding, linking and joining biodiversity networks.

**Option LR1: Do minimum**

**Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas**

**Option LR3: Initiate more significant interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		LR1	LR2	LR3
	<p>Option LR3, through facilitating the delivery of additional transport infrastructure, including Park &amp; Ride, has additional potential to lead to impacts on landscape character locally. This includes through the loss of features of landscape value, impacts on local distinctiveness and effects on tranquillity. Options LR1 and LR2, through focusing less on the delivery of physical infrastructure enhancements, are unlikely to deliver transport initiatives which have significant impacts on landscape character.</p> <p>The significance of effects from schemes initiated by Option LR3 would however depend on the design, layout and scale of the schemes, and the mitigation and avoidance measures proposed. It should also be noted that well designed schemes have the potential to lead to enhancements to the public realm and local character. Similarly, measures which help to relieve congestion may support improvements to local distinctiveness and the quality of the public realm.</p> <p>With regards to Option LR2, an approach which focuses to a greater degree on soft measures, technological solutions and demand management measures is less likely to lead to direct adverse impacts on landscape character. Local character also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on landscape character. In this respect a 'do minimum' approach taken forward through Option LR1 has less potential to initiate measures which bring these benefits.</p>			
Air Quality and Noise	<p>Air quality is not a significant issue for most rural areas in Oxfordshire; however, at some locations there are air quality issues associated with emissions from road transport (for example in Marcham, where an AQMA was declared along the A415 in 2015). Noise quality is also key issue for many rural areas.</p> <p>Options LR2 and LR3 will do more than Option LR1 to deliver packages of schemes which supports modal shift from the private car to public transport and walking and cycling, with benefits for noise and air quality. Option LR3, through introducing new Park &amp; Ride provision at some locations, may however increase noise and air quality issues at locations closer to such facilities. In addition, Option LR2, through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, may do more to reduce the need to travel for key services and facilities. This will support noise and air quality.</p>	2	1	3
Climate Change	<p>Option LR2 has a close focus on technical solutions to transport challenges. Through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, the option will support a reduction of the need to travel to key services, facilities and opportunities. The option also has a focus on smart travel, community transport and maintaining existing public transport links, and on enhancing electric charging infrastructure. In this context, the option will initiate a range of approaches which will help limit greenhouse gas emissions from rural transport.</p> <p>Option LR3, as part of its proposed package of interventions, seeks to deliver enhanced multimodal interchange, including new Park &amp; Ride provision. The overall effect of these interventions on greenhouse gas emissions is uncertain. Whilst Park &amp; Ride provision will support modal shift for at least part of users' journey, it also has the potential to</p>	2	1	3

**Option LR1: Do minimum**

**Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas**

**Option LR3: Initiate more significant interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		LR1	LR2	LR3

encourage car use. However, this option recognises that car travel will remain the predominant choice for many living in rural areas, and such provision has the potential to support modal shift for at least part of the journey. In this respect the detailed location and design of such multi-modal provision should be carefully considered to ensure that newly generated trips are limited, and benefits maximised.

Option LR1 will do less to initiate interventions which will limit greenhouse gas emissions from transport in rural areas, including through providing least support to alternative modes of transport to the private car or the decarbonisation of the transport network.

As such, Option LR2, through combining an approach which seeks to limit the need to travel, promote modal shift from the private car, whilst supporting the decarbonisation of private travel, will do most of the options to support climate change mitigation in rural areas through limiting greenhouse gas emissions from transport.

In terms of adapting to the effects of climate change, the effect of initiatives taken forward through the options depend on detailed interventions, including scheme design and layout, the integration of green infrastructure provision and other measures to help regulate the effects of extreme weather events. Similarly, the effect of initiatives on fluvial, surface water and groundwater flooding depend on scheme design considerations, including design and layout and the implementation of measures such as sustainable drainage systems.

Healthy and Safe Communities	<p>A 'do minimum' approach relying on existing commitments promoted through Option LR1 would do the least of the options to address the key socio-economic and quality of life issues influenced by transport in rural areas. In this context a range of issues are less likely to be addressed without appropriate interventions, including rural accessibility issues, the availability and affordability of public transport, and social exclusion.</p> <p>Option LR2, through seeking to maintain existing rural bus services, support smart travel and 'on demand' community transport, will help support accessibility for those without access to a private car. In addition, through delivering improved communications infrastructure such as broadband and mobile phone infrastructure enhancements, the option will support a reduction of the need to travel to key services, facilities and opportunities, with benefits for social inclusion.</p> <p>Option LR3 recognises that car use will remain the predominant and necessary choice for many in rural areas through seeking to enhance multimodal interchange, including potentially through Park &amp; Ride. This will support accessibility for those with access to private transport.</p> <p>Options LR2 and LR3 will therefore both bring benefits for the quality of life of rural residents. In this context a mixture of the schemes taken forward through these options would be likely to deliver most benefits for those living in rural areas.</p> <p>In addition to increasing travel choice, Options LR2 and LR3 have the potential to support economic vitality through enhancing connections to key services, facilities and employment opportunities and supporting the visitor economy. Option LR2 will also support the diversification of the rural economy through enhancing digital connectivity in rural areas.</p> <p>Health and wellbeing are closely linked to deprivation issues. In this context deprivation in rural areas is directly influenced by accessibility and social exclusion issues. This is highlighted by the higher levels of</p>	3	2	1
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**Option LR1: Do minimum**

**Option LR2: Optimise use of existing infrastructure and take a technological approach to transport challenges in rural areas**

**Option LR3: Initiate more significant interventions, including with regards to multimodal interchange**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		LR1	LR2	LR3
	<p>deprivation seen in rural areas relating to the 'Barriers to Housing and Services' domain.</p> <p>In this respect Options LR2 and LR3 will do more to deliver accessibility enhancements which will help limit deprivation in rural areas. Option LR2, through supporting rural bus services and providing an additional impetus on smart travel / 'on demand' community transport will help enhance accessibility to those without access to a private car. Communications enhancements, including to broadband and mobile phone infrastructure will also help overcome some of the barriers to accessing services and facilities.</p> <p>Option LR1, through initiating a do minimum approach, has the least potential to address the transport issues which adversely affect health and wellbeing in rural areas</p>			
Equalities	<p>In rural areas, groups with 'protected characteristics' tend to be disproportionately affected by accessibility issues. For those lacking their own transport, including the young, the elderly, and those with mobility issues, access to services and facilities is a significant challenge. These groups are often the least able to afford high costs of public transport and research shows that, on average, people on lower incomes in rural areas pay a higher proportion of their income on travel costs.</p> <p>In this respect Options LR2 and LR3 will do more to deliver accessibility enhancements which will support the needs of equalities groups in the rural areas of Oxfordshire. Option LR2, through supporting rural bus services and providing an additional impetus on smart travel / 'on demand' community transport will help enhance accessibility to those groups without access to a private car. Communications enhancements, including to broadband and mobile phone infrastructure will also help overcome some of the barriers to accessing services and facilities for those with protected characteristics.</p> <p>Option LR3 recognises that car use will remain the predominant and necessary choice for many of those with protected characteristics in rural areas through seeking to enhance multimodal interchange, including potentially through Park &amp; Ride. This will support accessibility for those with access to private transport.</p> <p>Option LR1, through initiating a do minimum approach, has the least potential to enhance accessibility for those groups with protected characteristics in the rural areas in Oxfordshire.</p>	3	2	1

## Overall conclusions

- 3.39 The assessment of the options considered as reasonable alternatives for the four identified areas has shown that in many cases that the 'do minimum' option performs less favourably against the ISA themes. This is given these options will do less to deliver enhancements which will help address some of the key accessibility and social inclusion issues experienced in different parts of Oxfordshire, or support economic vitality. Whilst in some cases the do minimum options may reduce the potential for direct adverse environmental effects, they also preclude opportunities to deliver key environmental enhancements in the county, including relating to air and noise quality, the quality of the townscape, landscape and the public realm, or relating to the rejuvenation of features and areas of historic environment interest. In addition, the do minimum options limit opportunities for utilising transport infrastructure enhancements to deliver sub-regional or local environmental net gain or for limiting greenhouse gas emissions.
- 3.40 The options which focus to a greater degree on 'soft' measures and demand management measures are less likely than the options supporting physical transport capacity enhancements to lead to direct adverse impacts on key environmental and socio-economic receptors in the county. These options also have the potential to deliver significant environmental enhancements and quality of life benefits through the encouragement of modal shift, a reduction in the need to travel, a limitation in traffic flows and improved traffic management.
- 3.41 The options which propose significant transport capacity enhancements have the potential to have a range of direct impacts on key receptors, including from landtake and impacts on the quality of the public realm. Physical transport capacity enhancements also have the potential to stimulate induced demand, with the potential to lead to direct and indirect impacts on features, areas and networks of environmental sensitivity, air and noise quality and greenhouse gas emissions.
- 3.42 The significance of effects from these interventions will though depend on the design, layout and scale of the schemes, and the mitigation and avoidance measures proposed. It is also recognised that the implementation of appropriate measures to 'lock in' the benefits of physical transport capacity enhancements is possible with the implementation of an appropriate package of complementary 'soft' transport and demand management measures. It is also recognised that such capacity enhancements have the potential to offer environmental benefits and deliver net gain, if designed appropriately.



## 4. Options for key LTCP themes

- 4.1 To support plan making further, the ISA process has considered different approaches that can be taken associated with the key thematic issues currently being explored for the LTCP Part 1.
- 4.2 In light of this, three sets of options have been developed and appraised through the ISA process relating to the following key themes:
- The climate emergency;
  - road safety; and
  - freight.
- 4.3 For each of these key themes a number of options have been identified and subsequently appraised. For each theme a do minimum is described which would be applied in all circumstances, together with two further options for additional levels of intervention over and above the do minimum. These options are designed to reflect the key issues facing the theme, and the different approaches that can be taken to intervention/investment in transport infrastructure and management.
- 4.4 The detail of the options appraised, and the appraisal findings, are presented below.

### Options relating to the climate emergency

- 4.5 The assessment of these options seeks to explore and support an understanding of different approaches that can be taken would be for delivering a truly net-zero Oxfordshire transport system.
- 4.6 Three options have been considered as alternatives for the ISA, as follows.

#### Option CE1: Do minimum

- 4.7 A do minimum option would rely on committed investment in transport infrastructure, which would continue at a local and strategic level. In practice this would mean road corridor and junction improvements, demand management measures in Oxford, mixture of active travel improvements and some new routes and some public transport schemes

#### Option CE2: Expand opportunities for electric car use and hydrogen vehicles

- 4.8 Recognising the falling cost and availability of electric vehicles, this option would focus on the delivery of new and improved infrastructure for such vehicles. Approaches would include improved charging infrastructure (including off street charging hubs and on street solutions where possible), enhanced parking availability and a reduction in charges for electric vehicles (including parking charges). The option would also seek to facilitate the delivery of new and improved infrastructure for hydrogen vehicles, recognising recent advances in this technology.

#### Option CE3: Demand management measures and enhancements in digital connectivity

- 4.9 This option would take a demand management approach, which would seek to limit significantly the number of private vehicles on the road. Approaches include zero emission zones, higher parking charges, a restriction in Park and Ride use and enhancements in digital connectivity.

### Appraisal findings

- 4.10 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

4.11 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 4.1: Appraisal of options relating to the climate emergency**

**Option CE1: Do minimum**

**Option CE2: Expand opportunities for electric car use and hydrogen vehicles**

**Option CE3: Demand management measures and enhancements in digital connectivity**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		CE1	CE2	CE3
Biodiversity	<p>Air pollution is a major driving force changing the natural environment, which changes the basic structure and function of ecosystems and the biodiversity which it supports. Deposited directly from the air and rain, nitrogen from transport enriches and acidifies the soil. This contributes to eutrophication and causes a competition effect where the more vulnerable plants cannot compete with hardier or nitrogen-loving plants. Ammonia from catalytic converters is also an issue.</p> <p>In this respect, an expansion of alternative fuelled vehicles stimulated through Option CE2 has the potential to help limit impacts on biodiversity from air quality issues through limiting emissions of nitrogen dioxide from transport. Similarly, a focus on demand management measures and enhancements in digital connectivity through Option CE3 will support a reduction of emissions from transport. This latter option may also serve to limit the need for new transport infrastructure which might impact on habitats and species through reducing demand for travel.</p> <p>A do minimum approach promoted through Option CE1 would do least to limit impacts from transport on habitats and species.</p>	3	1=	1=
Water and Soil Resources	<p>Option CE1, through facilitating the delivery of additional new physical transport infrastructure would require increased landtake than Options CE2 and CE3. This has increased potential to lead to the development of previously undeveloped land, including potentially productive land classified as the best and most versatile agricultural land. However it should be noted that as Option CE1 is a 'do minimum' option it is unlikely that the other options would significantly reduce land take given schemes would likely progress regardless. In the longer term though, reduced demand for road transport under Option CE3 has the potential to limit the need for new physical infrastructure associated with road transport. Without mitigation measures, additional delivery of new transport infrastructure through the options also has the potential to have impacts on water and soil quality through increases in surface water run-off. However, no significant impacts on water quality would be anticipated from schemes if the required embedded mitigation measures are incorporated within the construction and operational stage.</p>	2=	2=	1
Historic Environment	<p>Option CE3, which focuses to a greater degree on demand management measures and on reducing the need to travel through digital communication enhancements will help preclude direct adverse impacts on the historic environment and historic landscape/townscape character. The setting of the historic environment also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the setting of historic environment assets. Option CE2, which seeks to encourage the take up of electric vehicles will also support the setting of the historic environment through supporting improvements to noise quality.</p> <p>The physical transport infrastructure schemes likely to be initiated through Option CE1 have the potential to lead to impacts on the key assets (including designated features and areas) located in the vicinity of the key routes and areas targeted for interventions. The significance of effects</p>	3	2	1

**Option CE1: Do minimum**

**Option CE2: Expand opportunities for electric car use and hydrogen vehicles**

**Option CE3: Demand management measures and enhancements in digital connectivity**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		CE1	CE2	CE3
	from these interventions will however depend on design, layout and scale of the schemes, and mitigation and avoidance measures proposed. It should also be noted that committed schemes are likely to continue to take place through Options CE2 and CE3.			
Landscape	<p>Option CE3, which focuses to a greater degree on demand management measures and on reducing the need to travel through digital communication enhancements, will help preclude direct adverse impacts on landscape character from new transport infrastructure. The setting of landscape character also has the potential to benefit from initiatives taken forward through this option by an encouragement of modal shift, a limitation in traffic flows and improved traffic management. This will help limit adverse effects from traffic on the landscape. Option CE2, which seeks to encourage the take up of electric vehicles will also support landscape character through supporting improvements to noise quality. The increased number of physical transport infrastructure schemes likely to be initiated through Option CE1 have the potential to lead to impacts on the specific and distinct characteristics of the landscape in the vicinity of the key routes and areas targeted for interventions. The significance of effects from these interventions will however depend on design, layout and scale of the schemes, and mitigation and avoidance measures proposed.</p> <p>It should also be noted that committed schemes are likely to continue to take place through Options CE2 and CE3.</p>	3	2	1
Air Quality and Noise	<p>There are 13 AQMAs within Oxfordshire, all of which been designated for exceedances in the annual mean concentration objective of 40µg/m<sup>3</sup> for nitrogen dioxide (NO<sub>2</sub>)</p> <p>An expansion of alternative fuelled vehicles stimulated through Option CE2 will help limit emissions of nitrogen dioxide from transport. This is particularly likely to have benefits for air quality in Oxford city and the towns of Oxfordshire, where the majority of air quality issues exist. Similarly, a focus on demand management measures and enhancements in digital connectivity through Option CE3 will support a reduction of emissions from transport. Given electric vehicles will continue to emit particulate matter from road, tyre and brake wear, an overall reduction in car use has the most potential to support air quality improvements in the county.</p> <p>Both Options CE2 and CE3 will help support improvements to noise quality. In terms of Option CE2, an additional shift to electric vehicles (which are quieter than combustion models) has the potential to reduce noise pollution, especially in urban areas where speeds are generally low and traffic often stands still. Option CE3, through potentially facilitating an increased degree of modal shift, a limitation in traffic flows and improved traffic management will also support noise quality.</p> <p>A do minimum approach promoted through Option CE1 would do least to limit impacts from transport on air and noise quality.</p>	3	2	1
Climate Change	<p>Whilst over the entire lifecycle of a vehicle, the difference is less pronounced, there is a significant difference in greenhouse gas emissions between vehicles with a combustion engine and electric vehicles. Option CE2, through seeking to further stimulate electric vehicle use, will help decarbonise the transport sector. Similarly, a focus on demand management measures and enhancements in digital connectivity through Option CE3 will support a reduction of greenhouse gas emissions from transport through helping to limit traffic flows. In this respect both options</p>	3	2	1

**Option CE1: Do minimum**

**Option CE2: Expand opportunities for electric car use and hydrogen vehicles**

**Option CE3: Demand management measures and enhancements in digital connectivity**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		CE1	CE2	CE3
	<p>will support the target to make Oxfordshire's transport network zero-carbon by 2040.</p> <p>A do minimum approach promoted through Option CE1 would do least of the options to limit greenhouse gas emissions from transport or decarbonise the transport sector.</p>			
Healthy and Safe Communities	<p>There is increasing evidence that poor air quality has significant impacts on health and wellbeing. Breathing air with a high concentration of NO<sub>2</sub> can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases, particularly asthma, leading to respiratory symptoms (such as coughing, wheezing or difficulty breathing), and emergency hospital admissions. Longer exposures to elevated concentrations of NO<sub>2</sub> may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma, as well as children and the elderly are generally at greater risk for the health effects of NO<sub>2</sub>. It can also cause early death from both short-term and long-term exposure, causes cardiovascular harm (e.g. heart attacks, strokes, heart disease, congestive heart failure), is likely to cause respiratory harm and may cause reproductive and developmental harm. A recent report published by the government estimates that between 28,000 and 36,000 people die as a result of air pollution every year in the UK.<sup>10</sup></p> <p>In this respect, a shift to electric vehicles promoted by Option CE2 will have benefits for health and wellbeing through supporting enhancements to air quality. A focus on demand management measures and enhancements in digital connectivity through Option CE3 will also support air quality, and also the use of healthier modes of travel through encouraging modal shift and reducing the demand for travel by the private vehicle.</p> <p>More broadly, accessibility will be supported by a continuation of the current approach proposed by Option CE1, which seeks to initiate interventions which deliver a balanced transport network. However, a focus on demand management and restricting the use of the private vehicle through Option CE3 has the potential to reduce accessibility for those reliant on a car. This may particularly impact on those living in less accessible locations, including rural areas.</p> <p>A presumption towards electric vehicle use through Option CE2 may benefit some sectors of society more than others. These issues have been discussed under the Equalities theme below.</p>	1	2	3
Equalities	<p>Groups with 'protected characteristics' tend to be disproportionately affected by the negative effects of transport infrastructure, including from the physical and severance effects of transport corridors, effects on the quality of the public realm, and the effects of traffic and congestion on health and wellbeing.</p> <p>In this context, Option CE3, which seeks to limit demand for private car use, will help limit impacts of the transport network needs of groups with protected characteristics. However, a focus on demand management and restricting the use of the private vehicle through Option CE3 has the potential to reduce accessibility for those groups with protected characteristics reliant on a car. This may particularly impact on those living in less accessible locations of Oxfordshire, including rural areas.</p>	1	2	3

<sup>10</sup> Committee on the Medical Effects of Air Pollutants (August 2018) Associations of long-term average concentrations of nitrogen dioxide with mortality <https://www.gov.uk/government/publications/nitrogen-dioxide-effects-on-mortality>

**Option CE1: Do minimum**

**Option CE2: Expand opportunities for electric car use and hydrogen vehicles**

**Option CE3: Demand management measures and enhancements in digital connectivity**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference
		CE1 CE2 CE3

Option CE2, which seeks to facilitate an increased uptake in electric vehicle use, will support groups with protected characteristics who are particularly affected by air quality and noise issues associated with traffic and congestion. However, in terms of mobility, a focus on electric vehicle use through the option has the potential to raise equalities issues. This is associated with the barriers to electric car uptake which exist in respect of the initial higher capital costs of electric vehicles and, in the short term, the availability of charging provision. In this respect groups with protected characteristics, particularly those from a lower socio-economic background and those living in urban areas are less likely to see the benefit of such as approach.

With regard to Option CE1, an approach which assumes 'business as usual' would continue to support the transport and accessibility needs of groups with protected characteristics.

## Options relating to road safety

- 4.12 Road safety is a key issue for Oxfordshire, with various discussions taking place as to how to address the issue. This includes a potential reduction of speed limits in different parts of the county. As such number of alternative options relating to the issue has been considered through the ISA.
- 4.13 These options are as follows.

### Option RS1: Continue with the current approach to speed limits

- 4.14 This would continue with the current approach to speed limits. This allows Oxfordshire County Council to set local speed limits in situations where local needs and conditions suggest a speed limit which is lower than the national speed limit is appropriate.

### Option RS2: Apply a 20mph zone in urban areas

- 4.15 This would apply a blanket 20mph zone on routes which are currently have a 30mph speed limit, but only in urban areas.

### Option RS3: Apply a 20mph limit to areas within 30mph zones

- 4.16 This would apply a blanket replacement of current 30mph zones in the county with 20mph zones.

## Appraisal findings

- 4.17 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.
- 4.18 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 4.2: Appraisal of options relating to road safety**

**Option RS1: Continue with the current approach to speed limits**

**Option RS2: Apply a 20mph zone in urban areas**

**Option RS3: Apply a 20mph limit to areas within 30mph zones**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		RS1	RS2	RS3
Biodiversity	Option RS3 has the most potential to limit impacts on biodiversity in Oxfordshire. This is given lower speeds would help limit traffic collisions involving wildlife in both urban and rural areas, and also help reduce air and noise pollution which impact on habitats and species. Option RS2 would bring similar benefits, but only to urban areas. Effects of Option RS1 would be dependent on the speed limits set locally.	3	2	1
Water and Soil Resources	There are unlikely to be significant differences between the options with regards to land take or impacts on water resources. However, a reduction in speed limits has some limited potential to reduce the potential for water quality impacts from spillages associated with road accidents.	3	2	1
Historic Environment	Higher speeds can impact on the fabric of the historic environment through issues such as vibration. Higher speeds also impact on the setting and wider significance of heritage assets through effects on noise and visual impacts. In this respect, Options RS2 and RS3 have particular potential to reduce speeds in urban and both urban / rural locations respectively. As Option RS3 addresses both urban and rural areas, it is likely to be the best performing of the options in relation to this ISA theme.	3	2	1
Landscape	Higher speeds can impact on landscape and townscape character through effects on noise quality and visual impacts. In this respect, Options RS2 and RS3 have particular potential to reduce speeds in urban and both urban / rural locations respectively. As Option RS3 addresses both urban and rural areas, it is likely to be the best performing of the options in relation to this ISA theme.	3	2	1
Air Quality and Noise	Impacts from lower speeds on air quality are uncertain. In one respect, cars are more efficient and produce fewer emissions at speeds closer to 50mph, and as such are less efficient at 20 mph than 30 mph. However, the greater the speed of vehicles in built-up areas, the higher is the incidence of acceleration, deceleration, and braking, all of which increase air pollution. Similarly, in terms of noise pollution, at speeds below 30mph this is closely linked to the extent to which vehicles accelerate, decelerate and brake. In this respect effects depend on the location of speed limits in association with other measures to enhance road safety (such as traffic calming measures), which may have inadvertent effects on air quality if located in inappropriate locations. It should also be noted that indirect effects of such measures on reducing traffic flows may also support a limitation of emissions. The relative performance of the options is uncertain therefore.	?	?	?
Climate Change	Impacts from lower speeds on greenhouse emissions are uncertain. In one respect, cars are more efficient and produce fewer greenhouse gas emissions at speeds closer to 50mph, and as such are less efficient at 20 mph than 30 mph. However, the greater the speed of vehicles in built-up areas, the higher is the incidence of acceleration, deceleration, and braking, all of which increase emissions. In this respect effects depend on the location of speed limits in association with other measures to enhance road safety (such as traffic calming measures), which may have inadvertent effects on emissions if located in inappropriate locations. It should also be noted that indirect	?	?	?

	effects of such measures on reducing traffic flows may also support a limitation of greenhouse gas emissions. The relative performance of the options is uncertain therefore.			
Healthy and Safe Communities	All options are likely to lead to safety benefits to communities. Furthermore, effective use of speed limits could encourage residents to partake in more healthier modes of travel, including walking and cycling, as a secondary effect of increased safety on roads. This would bring benefits to the overall health and wellbeing of the community. Option RS2 would help to reduce speed limits in urban areas, which would benefit communities at 'high risk' collision zones such as near schools and other sensitive, as well as encouraging walking as a mode of transport. It would also provide benefits to cyclists in urban areas. Given its coverage of rural areas, Option RS3 has the potential to bring additional benefits through a wider coverage of the county. Whilst RS3 and RS2 are likely to bring additional benefits with regards to road safety, there are some uncertainties with regards to speed limits' impacts on air and noise quality (as discussed above). In this respect a flexible approach to speed limits (facilitated by Option RS1) may be appropriate in some circumstances.	3	2	1
Equalities	Option RS2 would help to reduce speed limits in urban areas, which would benefit groups with protected characteristics who are most affected by road safety issues. Given its coverage of rural areas, Option RS3 has the potential to bring additional benefits through a wider coverage of the county. As previously noted under the Healthy and Safe Communities ISA theme, Option RS1 will enable approaches to be tailored to the needs of the existing community, with a view to benefitting those communities at greatest risk of safety and pollution effects from speeding vehicles. However, in principal, Option RS2 has the potential to bring the most overall benefits for groups with protected characteristics.	2	1	3

## Options relating to freight

- 4.19 Freight is an ongoing issue for Oxfordshire. Whilst regional freight cannot be readily influenced by the LTCP, the LTCP's Freight and Logistics Strategy can potentially influence the 'last mile' approach to freight transport. This relates to the last leg of a freight journey to its final destination.
- 4.20 Last-mile delivery is driving some of the growth in the freight transport industry in terms of the increasing number of LGVs (light goods vehicles) on the county's roads. This is given: the rise in e-commerce, with an associated greater demand for online shopping and home delivery services, express and parcels services; the continued outsourcing of service functions to specialist companies; and increasing demand for smaller, more frequent collections and deliveries to companies (associated with just-in-time distribution). These trends have accelerated as a result of the Covid-19 pandemic.
- 4.21 As such three options relating to this issue have been considered through the ISA process, as follows.

### Option FR1: Continue with the current approach to last mile freight transport

- 4.22 This would continue with the current approach which does not seek to initiate specific provisions relating to 'last mile' freight transport.

## Option FR2: Seek to consolidate last mile freight transport

4.23 This option would seek to deliver initiatives such as area-wide freight management strategies, the use of multi-user freight consolidation centres or mobile depots and micro-consolidation hubs. It would also seek to utilise low carbon modes of transport for the 'last mile' segment of the supply chain, such as e-cargo bikes.

## Option FR3: Initiate innovative approaches to last mile freight transport

4.24 This option would encourage the use of drones (autonomous delivery vehicles in the air) and droids (autonomous delivery vehicles on the ground) to undertake last mile freight transport.

## Appraisal findings

4.25 The following table presents appraisal findings in relation to the three options introduced above. These are organised by the eight ISA themes.

4.26 For each ISA theme, a commentary on the likely effects is presented. Options are also ranked numerically reflecting their relative sustainability performance, with '1' the most favourable ranking and '3' the least favourable ranking.

**Table 4.2: Appraisal of options relating to freight**

### Option FR1: Continue with the current approach to last mile freight transport

### Option FR2: Seek to consolidate last mile freight transport

### Option FR3: Initiate innovative approaches to last mile freight transport

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		FR1	FR2	FR3
Biodiversity	Options FR2 and FR3 have the potential to reduce freight traffic in certain locations. This has the potential to reduce impacts from such movements on biodiversity from air and noise quality issues and road kills. Impacts from Option FR3 on some species (including bird species) from innovative approaches such as drones are however uncertain and may need to be managed.	3	1	2
Water and Soil Resources	Options FR2 and FR3 have the potential to reduce freight traffic in certain locations. This may help limit pollutants in surface water run-off from freight vehicles.	3	1	2
Historic Environment	Freight movements can have a significant impact on the fabric of the historic environment through issues such as vibration and impacts on air quality. Freight movements also have an impact on the setting and wider significance of heritage assets through impacts on noise and visual impacts. In this respect, Options FR2 and FR3 have particular potential to reduce freight traffic in certain locations, including built up areas with greater concentrations of heritage assets. This is given the larger numbers of freight movements in these locations for 'last mile' purposes. As Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it is the best performing of the options in relation to this ISA theme.	3	1	2
Landscape	Freight movements can have a significant impact on landscape and townscape character linked to noise and visual impacts. In this respect, Options FR2 and FR3 have the potential to reduce impacts from freight movements on local character. Given Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it is the best performing of the options in relation to this ISA theme.	3	1	2



**Option FR1: Continue with the current approach to last mile freight transport**

**Option FR2: Seek to consolidate last mile freight transport**

**Option FR3: Initiate innovative approaches to last mile freight transport**

ISA theme	Discussion of potential effects and relative merits of options	Rank of preference		
		FR1	FR2	FR3
Air Quality and Noise	Freight movements are a significant contributor to air and noise quality issues on the road network in Oxfordshire. Options FR2 and FR3, through helping to consolidate and limit the number of freight movements associated with the 'last mile' of delivery will therefore help limit inputs to air and noise pollution. The options have the potential to bring particular benefits to air and noise quality in built up areas given the larger number of these types of freight movements in these locations. As Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it is the best performing of the options in relation to this ISA theme.	3	1	2
Climate Change	Freight movements are a significant contributor to greenhouse gas emissions from transport in Oxfordshire. Options FR2 and FR3, through helping to consolidate and limit the number of freight movements associated with the 'last mile' of delivery will therefore help limit greenhouse gas emissions. As Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it is the best performing of the options in relation to this ISA theme.	3	1	2
Healthy and Safe Communities	Freight has a significant effect on health and wellbeing and the quality of life of residents. This includes through impacts on air and noise quality, contributions to road safety issues, and perceptions of safety and security. In this respect Options FR2 and FR3, through helping to consolidate and limit the number of freight movements associated with the 'last mile' of delivery will support the quality of life and health and wellbeing of residents. Given Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it is the best performing of the options in relation to this ISA theme.	3	1	2
Equalities	Groups with 'protected characteristics' tend to be disproportionately affected by the negative effects of freight transport, including from the physical and severance effects, road safety issues, effects on the quality of the public realm, and from air and noise quality. In this respect Options FR2 and FR3, through helping to consolidate and limit the number of freight movements associated with the 'last mile' of delivery will support the quality of life and health and wellbeing of those with protected characteristics. Given Option FR2 is likely to deliver a more comprehensive package for reducing freight traffic than the other options, it has the most potential to bring benefits for equalities groups.	3	1	2

## 5. Next steps

- 5.1 This Interim ISA Report has been designed to support the current decision-making process on the draft LTCP, and has been produced voluntarily with the intention of informing this stage of preparation of the LTCP.
- 5.2 The forthcoming consultation on the LTCP, which is anticipated will be undertaken in November 2021, will be accompanied by a full ISA Report. This will present to stakeholders the information required by the SEA Regulations, and include an assessment of the draft plan as consulted on.
- 5.3 Following the consultation period, comments will be reviewed and analysed and the HRA will be undertaken and consulted on with Natural England. The final LTCP Part 1 will then be developed, with a view to adoption in 2022. Any changes arising to the LTCP will need to be assessed as part of the ISA process.
- 5.4 SEA Regulations 16.3c)(iii) and 16.4 require that a 'statement' be made available to accompany the plan, as soon as possible after the adoption of the plan or programme. The purpose of the ISA Statement is to outline how the ISA process has influenced and informed the LTCP development process and demonstrate how consultation on the ISA has been taken into account. To meet these requirements, an ISA Adoption Statement will be published with the adopted version of Part 1 of the LTCP.

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