



Buckinghamshire Local Transport Plan 5

Integrated Sustainability Appraisal Report

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1. Introduction

1.1 Purpose of this document

This is the Integrated Sustainability Appraisal (ISA) Report of the Buckinghamshire Local Transport Plan 5 (LTP5), which has been prepared in respect of fulfilling the requirements of Sustainability Appraisal / Strategic Environmental Assessment (SA/SEA), Health Impact Assessment (HIA), Equality Impact Assessment (EqIA) and Community Safety Assessment (CSA). In addition, Habitats Regulation Assessment (HRA) has been undertaken as a parallel process to the ISA and is reported separately. The ISA Report identifies the likely sustainability effects of implementing the LTP5 and reports on the process of developing the LTP5 from a sustainability perspective. An overview of the LTP5 is presented in the following section.

1.2 Background and need for the LTP5

Buckinghamshire's Local Transport Plan 4 (2016 – 2036), developed by the former Buckinghamshire County Council, is the current core strategy for transport. The plan sets out the council's transport aspirations up to 2036. It includes 19 policies, which set out the high-level approach to transport in Buckinghamshire.

The single unitary authority, Buckinghamshire Council, was set up on 1 April 2020, replacing Buckinghamshire County Council and the district councils Aylesbury Vale District Council, Chiltern District Council, South Bucks District Council and Wycombe District Council.

Buckinghamshire Council are developing a new Local Transport Plan, LTP5, to reflect the ambitions, policies and plans for delivering transport improvements for all types of transport across the county up to 2045.

The LTP5 draft vision is as follows:

"By 2045 it will be easier for our residents to travel to work, school or college, to shop, use public services, or visit friends or leisure destinations.

For journeys in our towns, people will feel like they have the choice to walk, wheel, cycle or use public transport as these will be attractive, reliable and affordable options for local journeys.

In our villages and between our towns walking, wheeling, cycling or using public transport will be better and safer than it is now, but we will support those who need and want to travel by car to do so by tackling congestion, reducing delays and improving road safety.

By improving people's travel choices and helping our residents make the shift to electric and alternatively fuelled vehicles, we will have reduced our transport emissions, reduced noise

and air pollution from traffic, helped to ease congestion, and created thriving neighbourhoods.”

The LTP5 has the following draft objectives:

1. Connecting our economy

The productivity of local businesses; ability to attract investment; and access to opportunities for all residents are enhanced by fast, efficient, and reliable transport connections.

- a. Reduced delays and unreliable journey times caused by congestion and roadworks.
- b. High quality active travel and public transport options to local economic and employment centres, key services, schools and leisure facilities.
- c. Faster and easier journeys to London, the Midlands and within the South-East.
- d. The transport networks are well-maintained and prepared for the effects of adverse weather resulting from climate change.
- e. Minimise negative impacts of freight movement on local communities and ensure it is appropriate and efficient to support local business.

2. Reducing transport emissions

Transport emissions in Buckinghamshire (excluding motorways) are reducing and within our 2025-2050 carbon budget.

- a. Digital connections and access to more local services reduce the need for travel.
- b. Walking, cycling, and wheeling are safe, attractive options for shorter local journeys, especially those in urban areas, and as part of longer journeys.
- c. Travel by public transport is a viable and attractive option for residents, including to new housing and employment sites.
- d. Use of low and ultra-low emission vehicles is affordable and convenient.
- e. Sustainable travel options are integral to new developments.

3. Creating high quality places

Streets, neighbourhoods, and rights of way are designed to put the needs of people first, and to be safe and accessible for all.

- a. Traffic is encouraged to use the most appropriate routes.
- b. Traffic noise and air quality impacts on communities are minimised.
- c. Neighbourhoods and local centres are walking, wheeling and cycling-friendly, putting the needs of vulnerable road users first.
- d. Street design is high quality, inclusive and meets the needs of all users of the space.
- e. Biodiversity on and adjacent to transport networks is enhanced.
- f. There is improved road safety for pedestrians, cyclists, equestrians, motorcyclists and drivers.

- g. We are working towards a Rights of Way network which supports the needs of all users, including mobility and visually impaired users.

There are a range of challenges in Buckinghamshire (as with elsewhere in the United Kingdom) brought about by significant environmental and societal changes. It is the intention that the implementation and delivery of policies and schemes in the LTP5 will contribute to tackling these challenges currently facing Buckinghamshire. A summary of the challenges can be broadly considered to be:

- Car and van journeys made up 44% of journeys to work in 2021 in Buckinghamshire and car ownership in the South East is increasing.
- Public transport use is falling over the long-term. Since 2014, passenger journeys per head and vehicle miles have decreased.
- 13.6% of residents in Buckinghamshire (75,258 people) live in neighbourhoods with a nationally high risk of transport related social exclusion (TRSE).
- A range of transport issues has led to a contrast between rural isolation in more remote areas and poor air quality and congestion in parts of the towns.
- Commuting to workplaces is dominated by car travel, so congestion is a significant issue on roads, which affects public transport access and attractiveness, reduces productivity, and increases inactivity and vehicle emissions.
- Transport contributes a significant proportion of carbon emissions, making up 42.5% of total carbon dioxide emissions in 2022 in Buckinghamshire.
- In 2023 in England, only 47% of journeys to school (age 5–10-year-olds) were made by walking, the second lowest proportion since 2002, and 45% by car.

As such, the update of LTP5 shows an ongoing commitment from Buckinghamshire Council to take action to deliver wide-ranging improvements for efficient, cleaner, healthier and safer transport across the county.

The LTP5 will consist of a long term strategic policy document, alongside a separate 5-20 year implementation plan, which will articulate LTP5 scheme types to be tested by evidence from an Integrated Sustainability Appraisal (ISA).

2. Approach to the ISA

2.1 Introduction

The National Planning Policy Framework (NPPF) identifies three dimensions to sustainable development: economic, social and environmental. These dimensions give rise to the need for transport plans such as the Buckinghamshire LTP5 to perform a number of roles (adapted from the NPPF):

- **Economic role** – contributing to building a strong, responsive and competitive economy, by ensuring that the right type of transport is available in the right places and at the right time to support growth and innovation; and by identifying and coordinating development requirements, including the provision of infrastructure;
- **Social role** – supporting strong, vibrant and healthy communities, by providing the transport required to meet the needs of present and future generations; and by creating a high quality transport system, with accessible local services that reflect the community's needs and support its health, social and cultural well-being; and
- **Environmental role** – contributing to protecting and enhancing our natural, built and historic environment; and, as part of this, helping to improve biodiversity, use natural resources prudently, minimise waste and pollution, and mitigate and adapt to climate change including moving to a low carbon economy.

The ISA is aimed at ensuring the early integration of sustainability considerations into the development of the LTP5. As such it will be an iterative assessment process informing the LTP5 as it develops, to ensure that potential significant effects arising from the LTP5 are identified, assessed, mitigated and communicated to plan-makers.

It is also a fundamental requirement that the ISA ensures the Buckinghamshire Council meet all legislative requirements, to address:

- Strategic Environmental Assessment (SEA) in accordance with the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004/ 1633, "2004 Regulations" as amended).
- Habitats Regulation Assessment (HRA) required under Regulation 63 (and Regulation 105 with respect to land use plans) of The Conservation of Habitats and Species Regulations 2017 (as amended) (SI No. 2017/1012)s .
- Equality Impact Assessment (EqIA), as required by section 149 of the Equality Act 2010, as amended.
- Health Impact Assessment (HIA) – while there is no statutory requirement, it is considered good practice and in keeping with promoting healthy and safe communities as per the National Planning Policy Framework.

- Community Safety Assessment (CSA) – while there is no statutory requirement, it is considered good practice and in keeping with national guidance on crime prevention and community wellbeing.

2.2 Sustainability Appraisal / Strategic Environmental Assessment

Due to the potential for the LTP5 to lead to schemes which will require an Environmental Impact Assessment, it is a statutory requirement that SEA is undertaken under the European Directive 2001/42/EC 'on the assessment of certain plans and programmes on the environment' (the 'SEA Directive'). The SEA Directive came into force in the UK through the Environmental Assessment of Plans and Programmes Regulations 2004 (the "SEA Regulations"). While the United Kingdom has now left the EU, the SEA Regulations still apply to a wide range of plans and programmes, including transport plans, and modifications to them.

The overarching objective of the SEA Directive is:

"To provide for a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans... with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans... which are likely to have significant effects on the environment." (Article 1)

The main requirements introduced by the SEA Regulations are that:

- The findings of the SEA are published in an Environmental Report (ER), which sets out the significant effects of the draft plan.
- Consultation is undertaken on the plan and the ER.
- The results of consultation are taken into account in decision-making relating to the adoption of the plan.
- Information on how the results of the SEA have been taken into account is made available to the public.

Although the requirements to carry out Sustainability Appraisal (SA) and SEA are distinct, DCLG (Department for Communities and Local Government, proposed that both can be satisfied through a single appraisal process. It has produced guidance (see Chapter 4 Methodology) to ensure SAs meet the requirements of the SEA Directive whilst widening the Directive's approach to include economic and social issues as well as environmental ones.

In this Integrated Sustainability Appraisal (ISA) process, the ISA Report incorporates the SEA requirement for an Environmental Report.

2.3 Health Impact Assessment

While there is no statutory requirement to undertake a HIA in relation to the LTP5, it was recognised that it provides a useful way to support efforts to improve health of individuals and communities and help address health inequalities. In short, it was recognised that the LTP5 policies and proposals have the potential to impact on factors influencing the health of communities and individuals such as noise and air quality, access to key services and facilities, as well as the design of transport infrastructure. Undertaking an HIA ensured that potential impacts of the LTP5 on health and health inequalities have been considered as advised in National Planning Policy Framework (NPPF).

The incorporation of HIA is also in keeping with good practice. It is also the case that the Department for Transport (DfT) Transport Analysis guidance indicates that consideration of 'Human Health' is a legal requirement in a SEA and that an HIA is an integral part of an SEA to identify and inform health issues in Plans.

2.4 Equality Impact Assessment

An EqIA has been undertaken as it fulfils the statutory duties of public bodies to ensure the promotion of equalities under the Equality Act 2010 and subsequent Public Sector Equality Duty.

The purpose of an EqIA is to ensure plans and programmes do not discriminate against any individual or community and where possible promotes equality. An EqIA considers impacts on a variety of groups, mainly focussing upon the 'protected characteristic groups' (PCGs) established under the Act, namely:

- **Age** – this refers to persons defined by either a particular age or a range of ages;
- **Disability** – a disabled person is defined as someone who has a physical or mental impairment that has a substantial and long-term adverse effect on his or her ability to carry out day-to-day activities;
- **Sex / Gender** - an individual's actual or perceived sex, gender identity, self-image, appearance, behaviour, or expression, whether or not that gender identity, self-image, appearance, behaviour or expression is different from that traditionally associated with the sex assigned at birth;
- **Gender reassignment** - this refers to people who are proposing to undergo, are undergoing, or have undergone a process for the purpose of reassigning their gender identity;
- **Marriage** - marriage can be between a man and a woman or between two people of the same sex;

- **Civil Partnership** - Civil partnership can be between a man and a woman or between two people of the same sex. Civil partners must not be treated less favourably than married couples;
- **Pregnancy and maternity** - pregnancy is the condition of being pregnant or expecting a baby. Maternity refers to the period after the birth. In the non-work context, protection against maternity discrimination is for 26 weeks after giving birth;
- **Religion or belief** - religion means any religion a person follows. Belief means any religious or philosophical belief, and includes those people who have no formal religion or belief;
- **Race** - the Equality Act 2010 defines race as encompassing colour, nationality (including citizenship) and ethnic or national origins; and
- **Sexual Orientation** - a person's sexual orientation relates to their emotional, physical and/or sexual attraction and the expression of that attraction.

The Act also makes explicit the concept of 'dual discrimination', where someone may be discriminated against or treated unfairly on the basis of a combination of two of the protected characteristics.

DfT Transport Analysis guidance 2009 requires an evidence-led EqIA to be completed to help inform the development of the transport plan, ensuring it addresses any equality issues identified and takes account any impacts the plan may have on the local communities. Although not defined in the Equality Act, it is also the case that the issue of 'low income' and the implications of this were considered in the assessment.

The EqIA process is fully reported in this ISA Report.

2.5 Community Safety Assessment

A further key component to be fully considered and reported in the ISA is a Community Safety Assessment (CSA). The purpose of the CSA is to ensure that a scheme, strategy or policy does not have a detrimental impact on community safety (including crime and road safety) and where possible improves the existing situation.

The CSA has been undertaken in accordance with the requirements of the Crime and Disorder Act 1998 and will fulfil the requirement to carry out a review of the levels and patterns of crime, disorder and community safety in the area when developing a strategy or plan.

2.6 Reporting and Consultation as part of the ISA process

Key consultation requirements are those set in the SEA Regulations which identify three organisations (in England) to act as statutory consultation authorities in the SEA process: Environment Agency, Natural England (formerly English Nature and the Countryside Agency) and Historic England.

Two consultation periods involving the statutory consultation authorities and, in the latter period, the public are also set in the SEA Regulations. The consultation periods relate to:

- **Scoping.** The responsible authority is required to send details of the plan or programme to each consultation authority so that they may form a view on the scope, level of detail and appropriate consultation period of the Environmental Report. The consultation authorities are required to give their views within five weeks.
- **The Environmental Report.** The responsible authority is required to invite the consultation authorities and the public to express their opinions on the Environmental Report and the plan or programme to which it relates.

The responses from this consultation have been used to inform the ISA and have helped refine the LTP5.

Key reporting requirements are those set by the SEA Directive and SEA Regulations:

'An Environmental Report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated.'

As already indicated, the SEA Report has been integrated in this ISA Report. Table 2-1 sets out the way the specific SEA requirements have been met in this report.

Table 2-1 - Schedule of SEA Requirements

Information to be included in the Environmental Report under the SEA Regulations (Regulation 12 and Schedule 2)	Where covered in the ISA Report
1. An outline of the contents, main objectives of the plan, and of its relationship with other relevant plans and programmes	Chapter 1 and 5
2. The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan;	Chapter 6 and 8
3. The environmental characteristics of areas likely to be significantly affected	Chapter 6 and Appendix C & D
4. Any existing environmental problems which are relevant to the plan including, in particular,	Chapter 6 and Appendix C & D

	those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC;	
5.	The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan and the way those objectives and any environmental considerations have been taken into account during its preparation	Chapter 5 and Appendix B
6.	The likely significant effects on the environment, including short, medium and long-term effects, permanent and temporary effects, positive and negative effects, and secondary, cumulative and synergistic effects, on issues such as: biodiversity; population; human health; fauna; flora; soil; water; air; climatic factors; material assets; cultural heritage including architectural and archaeological heritage; landscape; the interrelationship between the above factors	Chapters 9 to 11 & 13
7.	The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan	Chapter 12
8.	An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information	Chapter 8
9.	A description of measures envisaged concerning monitoring in accordance with Regulation 17	Chapter 14
10.	A non-technical summary of the information provided under paragraphs 1 to 9	Non-Technical Summary

The ISA Report is thus an important consultation document and likely to be of interest to a wide variety of readers including decision makers, other plan/programme practitioners, statutory consultees, NGOs and members of the public. It accompanies the draft LTP5 on public consultation.

2.7 Habitat Regulation Assessment

Habitats Regulation Assessment (HRA) is required by Regulation 63 of The Conservation Habitats and Species Regulations 2017 (as amended)¹ (the 'Habitats Regulations') for all plans and projects which may have likely significant effects on a European site and are not directly connected with or necessary to the management of the European site. Regulation 105 of the Habitats Regulations relates specifically to land use plans and requires the plan-making authority to make an appropriate assessment of the implications for European sites, before the plan is given effect. LTP5 itself is not directly connected with, or necessary to, the nature conservation management of any European sites.

European Sites refer to sites protected in the UK under the Habitats Regulations. These include Special Protection Areas (SPAs) and Special Areas of Conservation (SACs), originally created under the European Commission Birds Directive and Habitats Directive, respectively. In addition, in accordance with UK policy², listed and proposed Wetlands of International Importance are included, which form part of a global network of protected sites created under the Ramsar Convention (also referred to as Ramsar sites), as well as sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential SPAs, possible SACs and listed or proposed Ramsar sites³.

The stages of the HRA process are:

- **Stage 1 - Screening:** To assess whether a plan or project either alone or in combination with other plans and projects is likely to have a significant effect on a European Site;
- **Stage 2 - Appropriate Assessment:** To determine whether, in view of a European Site's conservation objectives, the project or plan (either alone or in combination with other projects and plans) would have an adverse effect (or risk of this) on the integrity of the site with respect to the conservation objectives. If adverse impacts are anticipated, potential mitigation measures to alleviate impacts should be proposed and assessed;
- **Stage 3 – Derogations (allow exceptions):** Where a project or plan is assessed as having an adverse residual impact (or risk of this) on the integrity of a European Site, it may qualify for a derogation. Three legal tests must be applied in the following order:

¹ SI No. 2017/1012. Includes amendment by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (SI 2019/579).

² Ministry of Housing, Communities & Local Government (2023) National Planning Policy Framework. Paragraph 187.

³ SCIs are sites that were adopted by the European Commission before the end of the Transition Period following the UK's exit from the EU, but not yet formally designated by the government of each country. There is one SCI in the UK, located in Scotland.

1. There are no feasible alternative solutions that would be less damaging or avoid damage to the site.
2. The proposal needs to be carried out for imperative reasons of overriding public interest.
3. The necessary compensatory measures can be secured.

It is normal to identify European sites within a plan area, up to 15 km from the plan area and up to 30 km for SACs with bats as a qualifying feature, to capture all possible effects from implementation of the plan. The European sites identified in the search areas are detailed in Table 3-2 below. This includes three SACs within Buckinghamshire.

Table 3-2 - European sites for Nature Conservation within and adjacent to the Plan Area

Location	SAC	SPA	Ramsar sites
Within the LTP5 Area	There are three SAC Sites in Buckinghamshire: <ul style="list-style-type: none"> • Aston Rowant • Burnham Beeches • Chilterns Beechwoods 	There are no SPA Sites in Buckinghamshire.	There are no Ramsar Sites in Buckinghamshire.
Within 15km of the LTP5 Area	There are nine SACs within 15km of Buckinghamshire: <ul style="list-style-type: none"> • Aston Rowant • Burnham Beeches • Chilterns Beechwoods • Hartslock Wood • Little Wittenham • Oxford Meadows • Richmond Park • Thursley, Ash, Pirbright & Chobham • Windsor Forest & Great Park 	There are two SPA Sites within 15km of Buckinghamshire: <ul style="list-style-type: none"> • Thames Basin Heaths • South West London Waterbodies 	There is one Ramsar Site within 15km of Buckinghamshire: <ul style="list-style-type: none"> • South West London Waterbodies
Within 30km of the LTP5 Area for bat SACs	There is one SAC within 30km of Buckinghamshire with bats as a qualifying feature: <ul style="list-style-type: none"> • Mole Gap to Reigate Escarpment 	N/A	N/A

As noted, HRA is a parallel and separate process to ISA and informs the ISA regarding effects on European sites. The HRA of the LTP5 is being undertaken separately from the ISA and the

key output will be the HRA Stage 1 Screening Report. It is important to note that if the HRA Screening Report determines that there is likely to be a significant effect on European sites, then it will be necessary to undertake a Stage 2 Appropriate Assessment (as required by the Habitats Regulations), which will examine the impacts of the LTP5 against the conservation objectives of the European sites.

3. Scope of the ISA

3.1 Geographical and temporal scope of the LTP5

The LTP5 covers an area with a wide range of transport challenges. These challenges sit within diverse environmental and socio-economic settings.

The plan area comprises the single unitary authority of Buckinghamshire Council, which encompasses key towns High Wycombe and Aylesbury, as well as several market towns and villages such as Amersham, Chesham and Buckingham. Buckinghamshire is located in South East England.

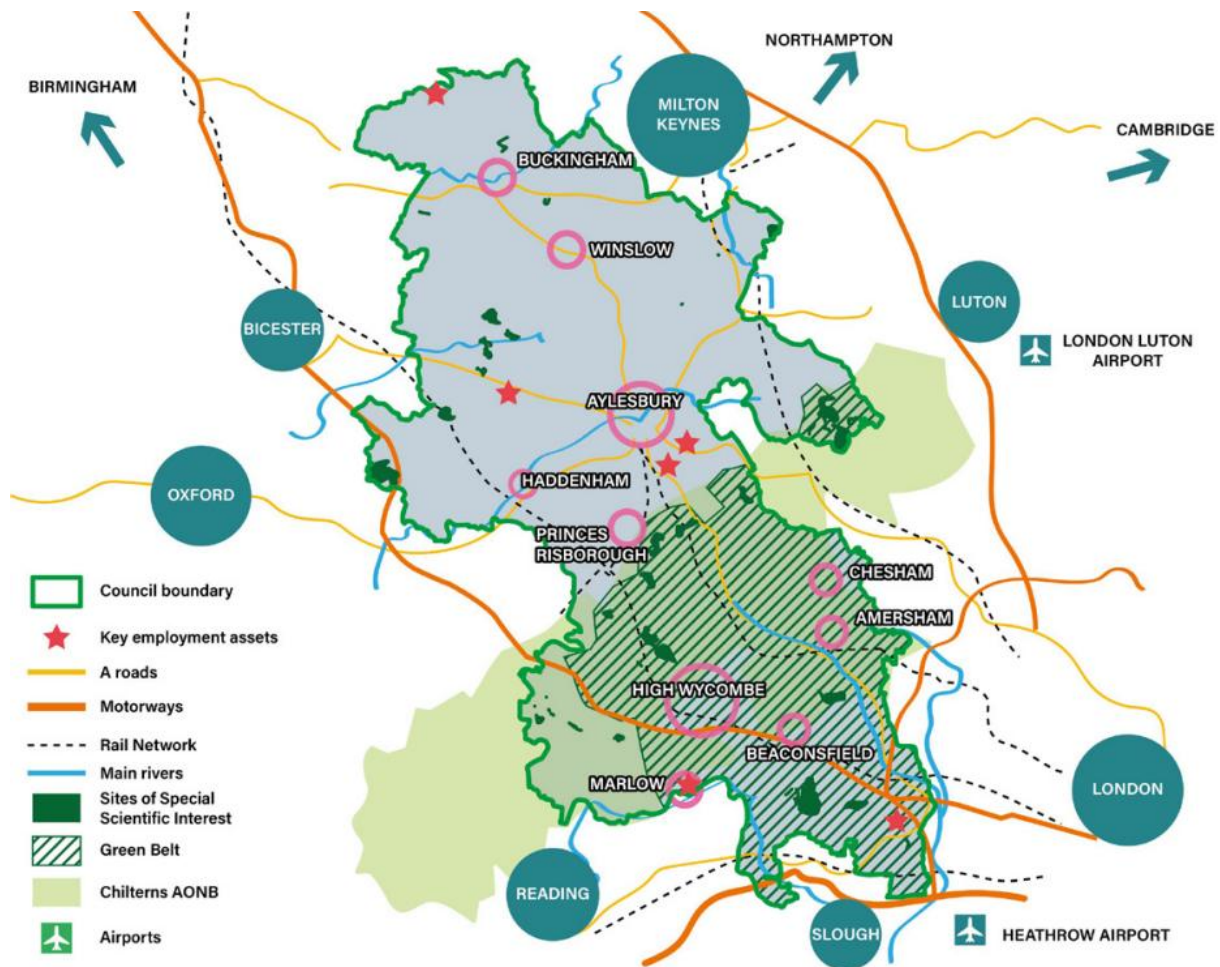
Chilterns National Landscape lies within the county, with a remit to conserve and enhance the natural beauty, wildlife, and cultural heritage of the chalk escarpments and wooded valleys that define the County's character.

It is also important to recognise that the implementation of the LTP5 may also have effects outside of Buckinghamshire. The neighbouring District and County Councils adjacent to Buckinghamshire are as follows:

- Oxfordshire County Council;
- Hertfordshire County Council;
- Central Bedfordshire Council;
- Cherwell District Council;
- Dacorum Borough Council;
- Hillingdon Council;
- Milton Keynes City Council;
- Slough Borough Council;
- South Oxfordshire District Council;
- Three Rivers District Council;
- West Northamptonshire Council;
- Royal Borough of Windsor and Maidenhead Council
- Wokingham Borough Council
- A number of London Borough Councils in proximity to Buckinghamshire, namely:
 - Richmond Council
 - Ealing Council
 - Brent Council
 - Hillingdon Council
 - Hounslow Council; and
 - Harrow Council

The LTP5 is a statutory document that sets out Buckinghamshire’s transport priorities to 2045.

Figure 2-1 – Buckinghamshire LTP5 Plan Area



3.2 Technical scope

The ISA has a very wide remit and considers the following topics associated with the various assessment processes it covers.

ISA / SEA

The SEA Directive and the SEA regulations require that the likely significant effects on the environment are assessed, considering the following factors and interrelationship between them:

- Biodiversity.
- Population.

- Human health (covering noise issues among other effects on local communities and public health).
- Fauna and flora.
- Soil;
- Water.
- Air.
- Noise.
- Climatic factors.
- Material assets (covering infrastructure, waste and other assets),
- Cultural heritage including architectural and archaeological heritage.
- Landscape.

ISA guidance requires the consideration of socio-economic factors alongside the environmental factors identified above.

HIA

Department of Health guidance recommends that the assessment of transport plans should consider the following topics:

- Transport to work, shops, schools and healthcare.
- Walking and cycling.
- Community severance.
- Frequency and severity of crashes.
- Collisions causing injury and fatal accidents.
- Air pollution, noise.
- Ageing population and increasing disability.

From a HIA perspective, in addition to the wider population as a whole (considered as residents / visitors and employees), there are vulnerable social groups that need special consideration in transport planning with regards to their health. These groups are likely to experience transport-related exclusion and / or be subject to negative externalities of transport and are as follows:

- Children and adolescents– who as non-drivers are reliant on others for motorised transport and who suffer the greatest impacts of transport policy on their health, particularly children in low-income families.

- Vulnerable travellers, including cyclists, pedestrians and commuters – this would include consideration of those who are more likely not to own a car in some communities and find it harder to travel to shops, employment, healthcare and other services.
- Older people – who may feel vulnerable using public transport, who often need to seek health services and who are particularly vulnerable to road crash related injuries. Their continuing independence at home is often dependent upon reliable transport options.
- Disabled and people with other health problems – who may not be able to access many forms of transport or need special arrangements to access those. They are more likely to find it difficult to walk and may also be disadvantaged by the cost of transport.
- Low-income groups – who are likely to walk further because they cannot afford public transport or to own a car and whose lack of transport options may limit life opportunities. They suffer the most from injuries, noise pollution and air pollution.

An overview of the baseline for Buckinghamshire as a whole, along with the review of relevant Plans and Policies has shown that all of the above groups are present within Buckinghamshire and are likely to utilise the transport network.

EqIA

The EqIA process focuses on the consideration of the potential LTP5 effects on nine protected characteristic groups (PCGs) identified in the Equality Act 2010 that are relevant to the transport agenda:

- Age.
- Disability.
- Sex / Gender.
- Gender reassignment.
- Marriage and Civil Partnerships.
- Pregnancy and maternity.
- Race.
- Religion or belief.
- Sexual orientation.

A degree of overlap between the HIA vulnerable social groups and the EqIA protected characteristics has been acknowledged by both HIA and EqIA processes. Consistency

between the two assessments has been ensured, where appropriate, particularly in terms of assumptions, analysing techniques and findings.

An overview of the baseline for Buckinghamshire as a whole, along with the review of relevant Plans and Policies has shown that all of the above groups are present within Buckinghamshire and are likely to utilise the transport network.

CSA

The approach to the CSA has considered the topics of community safety and crime and fear of crime.

4. ISA Methodology

The ISA has been used as a tool for improving the sustainability performance of the LTP5. Specifically, this has been achieved through allowing sustainability objectives to be considered throughout the plan's formulation process.

As has already been stated, the ISA process fully integrates a range of assessment processes: SA/SEA, HIA, EqIA and CSA. HRA has been undertaken in parallel to the ISA and its results incorporated into the ISA as appropriate. Table 4-1 demonstrates how the integration has been planned and achieved throughout all the preparation stages of the ISA and LTP5.

4.1 Assessment methodology

The ISA methodology adopted was developed broadly based on published guidance documents:

- Transport Analysis Guidance (TAG) 2.11 Strategic Environmental Assessment for Transport Plans and Programmes, Department for Transport, 'In Draft' Guidance, April 2009⁴;
- Sustainability Appraisal of Regional Spatial Strategies and Local Development Documents - Guidance for Regional Planning Bodies and Local Planning Authorities, by the ODPM, the Scottish Executive, the Welsh Assembly Government and the Northern Ireland Department of the Environment November 2005;
- A Practical Guide to the Strategic Environmental Assessment Directive, by the ODPM, the Scottish Executive, the Welsh Assembly Government and the Northern Ireland Department of the Environment, September 2005;
- Draft Guidance on Health in Strategic Environmental Assessment, Consultation Document, Department of Health, 2007;
- Health Impact Assessment in spatial planning, A guide for local authority public health and planning teams, Public Health England, 2020;
- Health Impact Assessment Guidance: A Manual, Standalone Health Impact Assessment and health in environmental assessment, Institute of Public Health, 2021; and
- National Planning Policy Framework, 2024 and associated Planning Practice Guidance (various dates from March 2014).

The work undertaken to-date involved the completion of SA/SEA stages A, B and C and associated tasks (see Table 4.1) together with HIA, EqIA, CSA and HRA (in parallel).

⁴ This document has been archived; however it has still been used to assist in developing the ISA methodology.

Table 4-1 – LTP5 preparation activities with the ISA process

Transport Planning Stage	Sustainability Appraisal/ Strategic Environmental Assessment		Habitats Regulation Assessment	Health Impact Assessment	Equalities Impact Assessment	Community Safety Assessment
	Stage	Tasks	Tasks	Tasks	Tasks	Tasks
Determining the scope of the LTP5 Refresh clarifying goals; specifying the problems or challenges the authority wants to solve	A. Setting the context and objectives, establishing the baseline and deciding on the scope	Review and confirm plans/programmes and strategies at a National, Regional and Local Level		Confirm and identify Health related plans/programmes and strategies (as part of SA/SEA)	Review and confirm plans/programmes and strategies	Review and confirm plans/programmes and strategies
		Review and confirm Sustainability themes		Review and confirm health-related themes (as part of SA/SEA)	Review and confirm equality-related themes	Review and confirm community safety related themes
		Review and update Baseline data and likely future trends	Confirm identification of all European sites within and up to 15km around the Strategy area, and 30km for SACs with bats as a qualifying feature	Gather data relating to health (as part of SA/SEA).	Review and update Baseline evidence	Review and update Baseline evidence

Transport Planning Stage	Sustainability Appraisal/ Strategic Environmental Assessment		Habitats Regulation Assessment	Health Impact Assessment	Equalities Impact Assessment	Community Safety Assessment
	Stage	Tasks	Tasks	Tasks	Tasks	Tasks
		Review and confirm Key sustainability issues – update these if required	Confirm details of all European sites	Review and confirm health specific issues (as part of SA/SEA)	Review and confirm equalities specific issues	Review and confirm community safety specific issues
		Review objectives and decision-making questions (SA/SEA Framework) – update these if required	Liaise with ISA/SEA team to ensure ISA/SEA Framework covers European sites appropriately	Ensure inclusion of Health specific objectives in ISA/SEA Framework	Ensure inclusion of Equalities specific objectives in ISA/SEA Framework	Ensure inclusion of community safety specific objectives in ISA/SEA Framework
		Prepare ISA Scoping Report to consult with relevant consultees	Input into ISA Scoping Report	Input into ISA Scoping Report	Input into ISA Scoping Report	Input into ISA Scoping Report
		Review consultation responses and update scoping	Review consultation responses as part of ISA/SEA for any	Review consultation responses and update scoping information	Review consultation responses and update scoping information	Review consultation responses and update scoping information for

Transport Planning Stage	Sustainability Appraisal/ Strategic Environmental Assessment		Habitats Regulation Assessment	Health Impact Assessment	Equalities Impact Assessment	Community Safety Assessment
	Stage	Tasks	Tasks	Tasks	Tasks	Tasks
		information for ISA Report	aspects of note in relation to HRA	for ISA Report	for ISA Report	ISA Report
Generating options for the LTP5 to resolve these challenges; appraising the options and predicting their effects	B. Developing, refining and appraising strategic options	Review and confirm Assessment of Plan objectives against the updated ISA/SEA Framework	Review proposals and considerations of likely impacts	Review and confirmation of Plan objectives and strategic options be undertaken within ISA/SEA	Review and confirmation of Plan objectives and strategic options be undertaken within ISA/SEA	Review and confirmation of Plan objectives and strategic options be undertaken within ISA/SEA
		Review and confirm Appraisal of Plan strategic options	Identification and consideration of other plans and projects			
		Review and confirm Evaluation / selection of Plan preferred options.				
Selecting	C. Assessing	Predict and assess	HRA review of	<i>Predict and assess</i>	<i>Predict and assess</i>	<i>Predict and assess</i>

Transport Planning Stage	Sustainability Appraisal/ Strategic Environmental Assessment		Habitats Regulation Assessment	Health Impact Assessment	Equalities Impact Assessment	Community Safety Assessment
	Stage	Tasks	Tasks	Tasks	Tasks	Tasks
preferred options for the LTP5 and deciding priorities	the effects of the draft LTP5	effects of new or revised options taken forward. Confirm findings in relation to previously assessed schemes.	proposals in draft Strategic Transport Plan (screening and appropriate assessment)	<i>effects of new or revised preferred options to be undertaken within ISA/SEA.</i>	<i>effects of new or revised preferred options to be undertaken within ISA/SEA.</i>	<i>effects of new or revised preferred options to be undertaken within SA/SEA. Review and confirm and if required, propose mitigation measures within ISA/SEA</i>
		Review and confirm proposed mitigation measures – if required, new mitigation measures to be developed	Review and confirm and if required, propose mitigation measures	<i>Review and confirm and if required, propose mitigation measures within ISA/SEA</i>	<i>Review and confirm and if required, propose mitigation measures within ISA/SEA</i>	
		Develop monitoring programme	<i>Monitoring as part of ISA/SEA</i>	<i>Monitoring as part of SA/SEA</i>	<i>Monitoring as part of SA/SEA</i>	
Production of the draft LTP5	C. Prepare ISA Report		Prepare HRA Report	<i>HIA fully documented in ISA Report (no separate output but HIA component)</i>	<i>EqIA fully documented in ISA Report (no separate output but EqIA)</i>	<i>Community Safety fully documented in ISA Report (no separate output but Community</i>

Transport Planning Stage	Sustainability Appraisal/ Strategic Environmental Assessment		Habitats Regulation Assessment	Health Impact Assessment	Equalities Impact Assessment	Community Safety Assessment
	Stage	Tasks	Tasks	Tasks	Tasks	Tasks
				<i>properly identified)</i>	<i>component properly identified)</i>	<i>Safety component properly identified)</i>
Consultation on draft LTP5	D. Consulting on ISA Report	<i>HRA Report sent to Natural England for comment/ agreement on findings</i>	<i>HIA Consultation included in ISA Report consultation</i>	<i>EqlA Consultation included in ISA Report consultation</i>	<i>Community Safety Consultation included in ISA Report consultation</i>	
Production of final LTP5	D. Assess significant changes	<i>Assess significant changes</i>	<i>HIA assessment of significant changes undertaken as part of ISA/SEA</i>	<i>EqlA assessment of significant changes undertaken as part of ISA/SEA</i>	<i>Community Safety assessment of significant changes undertaken as part of ISA/SEA</i>	
Adoption of LTP5	E. Post Adoption Statement	<i>Prepare updated HRA Report</i>	<i>Relevant results reported in Post Adoption Statement</i>	<i>Relevant results reported in Post Adoption Statement</i>	<i>Relevant results reported in Post Adoption Statement</i>	

SA / SEA

Stage A - Setting the Context and Establishing the Baseline

Other Relevant Legislation, Plans and Programmes

The LTP5 will both influence and be influenced by other plans, policies and programmes (PPPs) produced by local and combined authorities, by statutory agencies and other bodies with plan making responsibilities. Legislation is a further driver that sets the framework for the LTP5, both directly and indirectly. Relevant legislation plans and programmes have been identified and considered to inform the preparation of this ISA Report (see Chapter 5).

Baseline information and Key Sustainability Issues

To predict accurately how potential LTP5 proposals will affect the current baseline, it is first important to understand its current state and then examine the likely evolution of the environment without the implementation of the plan. Baseline information provides the basis for understanding existing local environmental, economic and social issues, in particular in respect of health and equality, and alternative ways of dealing with them; formulating objectives to address these issues and predicting and monitoring sustainability effects.

Key sustainability issues in general, and those pertaining to health and equality in particular, across Buckinghamshire have been identified as a result of the analysis of the baseline data and the review of other plans and programmes. The identification of these issues helped focus the ISA processes on the aspects that really matter. Implications to LTP5 development and opportunities for how the LTP5 could assist in addressing these issues were also identified.

Information on key baseline and sustainability issues is presented in Chapter 6 of this report.

Developing the ISA Framework

A set of ISA Objectives has been developed, against which the policies and proposals in LTP5 could be assessed.

For each objective, assessment aid questions were set out to form the ISA framework. The assessment aid questions provided a clarification of the intended interpretation of each objective to support direction of change sought through the implementation of LTP5. The questions have guided the LTP5 assessment process.

The ISA Objectives and assessment aid questions were refined through the consultation on the Scoping Report and are presented in Chapter 7 of this report.

Stage B – Developing alternatives

Testing LTP5 Objectives against the ISA Objectives

A compatibility assessment of LTP5 objectives in its initial stages of preparation against the ISA objectives was carried out, as part of the iterative process to assess the sustainability of LTP5 objectives. This assessment ensured that consideration of the ISA Objectives informed the development and refinement of the LTP5 Objectives and provided a suitable framework for developing alternatives (see Chapter 8 of this report).

Developing, refining and appraising Strategic Alternatives

Consideration of alternative strategies for LTP5 is an integral part of the plan development. Strategic alternatives were identified by Buckinghamshire Council and have been assessed as part of the ISA process.

This task comprised the prediction of changes arising from the LTP5's alternative strategies. While carrying out this evaluation, each alternative was considered in the context of whether it would have a likely significant effect in relation to each of the ISA objectives. The results are presented in Chapter 8 of this report.

Assessing the effects of the LTP5

Assessing the significance of predicted effects is essentially a matter of judgement. There are a number of factors that will determine the significance of an effect, e.g. its scale and permanence and the nature and sensitivity of the receptor. It is very important that judgements of significance are systematically documented, in terms of the particular characteristics of the effect which are deemed to make it significant and whether and what uncertainty and assumptions are associated with the judgement. The assessment of significance also includes information on how the effect may be avoided or its severity reduced.

In the current practice of IA (influenced by SEA), the broad-brush qualitative prediction and evaluation of effects can be often based on a qualitative seven point scale in easily understood terms. In general, this assessment has adopted the scale shown in Table 4-2 to assess the significance of effects of the schemes and proposals in the LTP5.

Table 4-2 - Criteria for assessing significance of effect

Assessment Scale	Assessment Category	Significance of Effect
+++	Major beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant

0	Neutral or no obvious effect	Significant
-	Slight adverse	
--	Moderate adverse	
---	Major adverse	

Moderate and strong beneficial and adverse effects (and combination of this type of effect) have been considered of significance, whereas no effect and slight beneficial and adverse effects (and combination of this type of effect) have been considered non-significant.

Assessments have been undertaken for proposals contained in the LTP5. The results are discussed in Chapter 10.

As part of the assessment of the LTP5, a number of mitigation measures (recommendations) are set out in Chapter 11. Buckinghamshire Council has given careful consideration to these recommendations and has addressed these as appropriate in the preparation of the LTP5 for public consultation.

The term mitigation encompasses any approach that is aimed at preventing, reducing or offsetting significant adverse environmental effects that have been identified. A range of measures applying one or more of these approaches has been considered in mitigating any significant adverse effects predicted as a result of implementing the LTP5. In addition, measures aimed at enhancing positive effects have also been considered. All such measures are generally referred to as mitigation measures.

However, the emphasis of the assessments has been in the first instance on proactive avoidance of adverse effects. Only once alternative options or approaches to avoiding an effect have been examined, then ways of reducing the scale/importance of the effect have been examined and proposed.

Mitigation can take a wide range of forms, including:

- Refining intervention measures in order to improve the likelihood of positive effects and to minimise adverse effects.
- Technical measures (such as setting guidelines) to be applied during the implementation stage.
- Identifying issues to be addressed in project environmental impact assessments for certain projects or types of projects.
- Proposals for changing other plans and programmes.

The assessment also considered cumulative, indirect (secondary) and synergistic effects of the LTP5 as outlined in the following section.

Secondary and Cumulative Effects Assessment

Annex I of the SEA Directive requires that the assessment of effects include secondary, cumulative and synergistic effects.

Secondary or indirect effects are effects that are not a direct result of the plan but occur away from the original effect or as a result of the complex pathway e.g. a development that changes a water table and thus affects the ecology of a nearby wetland. These effects are not cumulative and have been identified and assessed primarily through the examination of the relationship between various objectives during the Assessment of Effects.

Cumulative effects arise where several proposals individually may or may not have a significant effect, but in-combination have a significant effect due to spatial crowding or temporal overlap between plans, proposals and actions and repeated removal or addition of resources due to proposals and actions. Cumulative effects can be:

- Additive - the simple sum of all the effects.
- Neutralising - where effects counteract each other to reduce the overall effect.
- Synergistic - is the effect of two or more effects acting together which is greater than the simple sum of the effects when acting alone. For instance, a wildlife habitat can become progressively fragmented with limited effects on a particular species until the last fragmentation makes the areas too small to support the species at all.

Many sustainability problems result from cumulative effects. These effects are very hard to deal with on a project by project basis through Environmental Impact Assessment. It is at the strategic level that they are most effectively identified and addressed.

Cumulative effects assessment is a systematic procedure for identifying and evaluating the significance of effects from multiple activities. The analysis of the causes, pathways and consequences of these effects is an essential part of the process.

Cumulative (including additive, neutralising and synergistic) effects have been considered throughout the entire ISA process, as described below:

- Identification of key sustainability (including detailed health and equality) issues as part of the review of relevant strategies, plans and programmes and baseline data analysis.
- Establishing the nature of likely cumulative effects, causes and receptors.

- Identifying key receptors (e.g. specific wildlife habitats) in the process of collecting baseline information and information on how these have changed with time, and how they are likely to change without the implementation of the LTP5.
- Particularly sensitive, in decline or near to their threshold (where such information is available) or with slow recovery receptors have been identified through the analysis of environmental issues and problems.
- The development of ISA objectives and assessment aid questions has been influenced by cumulative effects identified through the process above and ISA objectives that consider cumulative effects have been identified.
- Cumulative effects of LTP5 proposals have been assessed.

The results are presented in Chapter 12 of this report.

Monitoring the effects of the LTP5 implementation

Monitoring involves measuring indicators which will enable the establishment of a causal link between the implementation of the plan and the likely significant effect (positive or negative) being monitored. It thus helps to ensure that any adverse effects which arise during implementation, whether or not they were foreseen, can be identified and that action can be taken by Buckinghamshire Council, or partner bodies, to deal with them.

A monitoring programme has been prepared showing, for each significant effect, what data should be monitored, the source of the data, the frequency of monitoring, as well as when and what actions should be considered if problems are identified from the monitoring.

The results are presented in Chapter 13 of this report.

Stage C – Preparing the ISA Report

This ISA Report has been prepared to accompany the draft LTP5 on consultation.

Stage D - Consulting on the Draft Revised LTP5 and ISA Report

Assessing significant changes

The ISA Report will be published for formal consultation with the draft LTP5. The results of the formal public consultation exercise may well result in changes to the LTP5 and these will have implications for the ISA Report. In addition, the consultation exercise may result in direct changes to the contents of the ISA Report. These will be reported in the Post Adoption Statement.

Post Adoption Statement

Following completion of the public consultation and preparation of the Final LTP5 document, a statement (separate document) will be prepared setting out the following:

- How sustainability considerations have been integrated into the plan, for example any changes to or deletions from the plan in response to the information in the ISA Report.
- How the ISA Report has been taken into account.
- How the opinions and consultation responses have been considered and addressed. The summary should be sufficiently detailed to show how the plan was changed to take account of issues raised, or why no changes were made.
- The reasons for choosing the plan as adopted in the light of other reasonable alternatives dealt with.
- The measures that are to be taken to monitor the significant environmental effects of implementation of the LTP5.

Health Impact Assessment

In order to ensure that potential impacts of the LTP5 on health and health inequalities have been considered and to fulfil the requirements of health legislation, a Health Impact Assessment (HIA) has been undertaken in a fully integrated fashion with the SA/SEA process as set out in Table 4-1. The need for HIA arises from the recognition that the LTP5 proposals may impact on the factors influencing the health of communities and individuals, including such factors as noise and air quality, accessibility to key services and facilities and the design of transport infrastructure.

Approach to HIA

The HIA objectives that have been considered have been developed in the light of HIA guidance and identified health issues, as well as the consultation that has taken place. The approach to the HIA has ensured that all relevant topics have been considered throughout the assessment process from establishing the baseline and building up the area's population profile in terms of health, identifying the key issues, developing the ISA Framework, assessing the LTP5, mitigation and monitoring.

The HIA has identified actions that can enhance positive effects and reduce or eliminate negative effects of the LTP5, with respect to health and health inequalities.

HIA consultation

Consultation to inform the HIA has been undertaken as part of the overall SA/SEA process. Consultation responses have been analysed to inform the HIA (see reporting and consultation as part of the ISA process).

Equality Impact Assessment

In order to ensure that potential impacts of the LTP5 on equality have been considered and to fulfil legislative requirements, an Equality Impact Assessment (EqIA) has been undertaken in a fully integrated manner with the SA/SEA process.

Approach to EqIA

The EqIA objectives that have been considered have been developed in the light of EqIA guidance and identified equalities issues, as well as the consultation that has taken place. The approach to the EqIA has ensured that all relevant topics have been considered throughout the assessment process from establishing the baseline and building up the area's population profile in terms of equalities, identifying the key issues, developing the ISA Framework, assessing the LTP5, mitigation and monitoring.

EqIA consultation

Consultation to inform the EqIA has been undertaken as part of the overall SA/SEA process. Consultation responses have been analysed to inform the EqIA (see reporting and consultation as part of the ISA process).

Community Safety Assessment

To ensure that potential impacts of the LTP5 on community safety have been considered, and to fulfil legislative requirements, a CSA has been undertaken in a fully integrated manner with the SA/SEA process.

Approach to CSA

The CSA objectives that have been considered have been developed in the light of CSA guidance and identified safety issues, as well as the consultation that has taken place. The approach to the CSA has ensured that all relevant topics have been considered throughout the assessment process from establishing the baseline and building up the area's population profile in terms of crime and safety, identifying the key issues, developing the ISA Framework, assessing the LTP5, mitigation and monitoring.

CSA consultation

Consultation to inform the CSA has been undertaken as part of the overall SA/SEA process. Consultation responses have been analysed to inform the CSA (see Section 2.6).

5. Review of relevant legislation and other plans and programmes

5.1 Introduction

The LTP5 will both influence and be influenced by other plans, policies and programmes (PPPs) produced by local authorities, statutory agencies (at a national, regional and local level) and other bodies with plan making responsibilities. Legislation is a further driver that sets the framework for the LTP5, both directly and indirectly.

This interaction is reflected by the requirement of the SEA Regulations (2004) that information be provided on:

"The degree to which the plan or programme influences other plans and programmes including those in a hierarchy" (Schedule 1);

"Its relationship with other relevant plans and programmes" (Schedule 2);

and

"The environmental protection objectives, established at international, Community or Member State level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation." (Schedule 2)

5.2 Methodology

Both the LTP5 and the ISA Report should be set in the context of international, national, regional and local objectives along with environmental, strategic planning, transport, health, social, economic and equality policies.

Relevant plans and programmes include those at different levels (international, national, regional and local) which influence the Transport Plan, or those in other sectors which contribute, together with the Transport Plan, to sustainability conditions of the area to which they apply.

Appendix B lists the documents reviewed to identify environmental, social (health and equality) and economic themes. A series of key generic themes which have emerged from the review are presented below.

5.3 Themes

The review of PPPs revealed a large number of common themes in terms of their objectives relating to sustainability within the context of transport planning. These are listed below:

Air Quality

- Reduce Emissions of NO₂
- Reduce emissions from road transport in particular
- Reduce emissions from other forms of transport
- Increase use of low emission / zero emission at point of use vehicles
- Reduce emissions of PM₁₀ and PM_{2.5}

Greenhouse gas (GHG) Emissions

- Reduce GHG emissions, particularly CO₂
- Maximise the use of renewable energy
- Increase energy efficiency and make use of new technology
- Minimise use of fossil fuels
- Contribute to the achievement of Net Zero Carbon by 2050, in line with Buckinghamshire Council's Climate Change and Air Quality Strategy

Adaptation to a Changing Climate and Flooding

- Prepare for extreme weather events and sea level rise
- Minimise the risk and impact of flooding
- Avoid development in floodplains when possible
- Help meet objectives of Flood Risk Management Plans allowing for Climate Change
- Help ensure active travel routes are not subject to weather extremes (for example heat or wind)

Biodiversity, Fauna and Flora

- Protection of sites designated for nature conservation purposes
- Protect and enhance endangered or important species and habitats, including functionally linked land
- Contribute to the delivery of biodiversity strategies and plans
- Increase important habitat
- Protect, maintain and where possible enhance natural habitat networks and green infrastructure, to avoid fragmentation and isolation of networks
- Achievement of 10% Biodiversity Net Gain

Cultural Heritage

- Conserve and protect historic assets (designated and undesignated) and those of cultural note, including archaeology and historic landscapes as well as the setting of heritage assets
- Improve access to historic assets, including buildings and landscapes of value where appropriate

- Sympathetic design and use of vernacular architecture and when appropriate to enhance the local character and 'sense of place'

Water Resources

- Protect and improve the quality of ground and surface water
- Help to meet objectives of the Water Framework Directive (WFD)
- Make use of Sustainable Drainage Systems (SuDS)

Land Use, Soil and Agriculture

- Prioritise development on 'brownfield' and 'greyfield' sites
- Seek to reclaim derelict and contaminated land
- Protect farmland and soils, particularly those of the highest value

Landscapes and Townscapes

- Protect and enhance landscape, (particularly those recognised of national importance) and townscape character and local distinctiveness
- Protect tranquillity from the impacts of noise and light pollution

Natural Resources and Waste

- Ensure efficiency resource use and minimise resource footprint
- Use secondary and recycled materials
- Consider opportunities to maximise on-site re-use of materials
- Employ waste reduction methods to minimise construction and maintenance waste
- Reduce the amount of waste disposed of at landfill
- Promote circular economy
- Avoid the sterilisation of mineral resources

Economic Themes

- Improve physical accessibility to jobs through the location of employment sites and transport links close to areas of high unemployment
- Widen the number and range of accessible employment opportunities and support growth in employment and labour productivity
- Make the Buckinghamshire Council area more attractive for inward investment
- Improve rail and road journey efficiency and reliability for business users
- Support the wellbeing of local businesses
- Support enhancement of local economy and overall prosperity
- Support development and improvement of the skills base

Health Themes

- Tackle poor health by improving the health of everyone, and the health of the worst off in particular
- Reduce health inequalities among different groups in the community (e.g. young children, pregnant women, black and minority ethnic people; older people, people with disabilities; low-income households)
- Support the public to make healthier and more informed choices with regard to their health and adopt physically active lifestyles
- Address pockets of deprivation, including those in rural areas
- Provide physical access for people with disabilities
- Provide or improve access to local health and social care services
- Provide opportunities for increased exercise, thus reducing obesity, particularly in children, and illnesses such as coronary heart disease
- Provide for ageing population
- Promote healthy lifestyles through exercise, physically active travel and access to good quality and affordable food, which can assist in reducing both physical and mental illnesses

Equality Themes

- Protect human rights (e.g. the right to liberty and security of person) and fundamental freedoms (e.g. a right to freedom of thought, conscience and religion, freedom of expression, etc.)
- Prohibit discrimination, harassment and victimisation on such grounds as sex, race, language and religion
- Promote equality of opportunity in the way services are planned promoted and delivered
- Treat everyone with dignity and respect
- Recognise people's different needs, situations and goals and remove the barriers that limit what people can do and can be
- Create sustainable communities which are active inclusive, safe, tolerant and cohesive
- Create sustainable communities which are fair for everyone – including those in other communities, now and in the future
- Improve economic, social and environmental conditions particularly in the most deprived areas
- Ensure fair access to and distribution of resources across the community, including rural areas
- Assess and address the impacts upon diverse communities including cultural, racial, economic, generational, social (including disabilities) and religious mixes
- Create a sense of belonging and wellbeing for all members of the community

- Provide physical access for people with disabilities
- Minimise isolation for vulnerable people
- Improve rural connectivity

Community Safety Themes

- Create communities which are safe, inclusive, fair, tolerant and cohesive
- Maintain reductions in crime and anti-social behaviour
- Improve perceptions that the communities are safe places to work, live and visit
- Reduce speeding and improve road safety

Cross cutting

- Support the UK Government’s 25 Year Plan to improve the Environment 2018 goals and key actions as follows:
 - Using and managing land sustainably, including embedding an “environmental net gain” principle into development.
 - Recovering nature and enhancing the beauty of landscapes.
 - Connecting people to the environment to improve health and wellbeing.
 - Increase resource efficiency and reducing pollution.
 - Securing clean, healthy and productive and biologically diverse seas and oceans.
 - Protecting and improving the global environment.
- Support Environment Act 2021 stipulations:
 - Targets for four priority areas: (a) air quality; (b) water; (c) biodiversity; (d) resource efficiency and waste reduction to be set.
 - Two priority areas: air quality (PM2.5 air quality target) and biodiversity (species abundance target) and important new target to reverse the decline in species abundance by the end of 2030.
 - Environmental improvement plan for significantly improving the natural environment for a period no shorter than 15 years.
 - 10% biodiversity net gain required for new development.
 - Prevent waste/reduce the amount of a product that becomes waste and increase re-use, redistribution, recovery and recycling.
- Support the Local Plan for Buckinghamshire, currently at draft stage as of January 2026. The Draft Plan was under consultation running from 17 September to 29 October 2025 and Buckinghamshire Council are aiming to publish a Statement of Consultation at the end of January 2026. The Draft Plan includes the following objectives:
 - To conserve and enhance Buckinghamshire’s valued natural, historic, and built environments, to ensure they are protected from inappropriate development.

- To ensure the delivery of sustainable development, mitigating climate change and adapting to the impacts on Buckinghamshire’s environment.
- To meet housing needs for all of the different groups in the community, including affordable housing, and to provide increased tenure choice throughout Buckinghamshire, prioritising the efficient use of land.
- Create great places to live and work that function well, and are welcoming, safe, and accessible to all.
- To support communities throughout Buckinghamshire with their health, social and cultural wellbeing.
- We aim to protect and improve health care facilities and access to them for residents. To ensure the right infrastructure required to support communities is provided in the right place and at the right time, and make best use of existing infrastructure.
- To grow and diversify the economy by delivering the right employment opportunities in the right places, supporting economic growth, productivity, regenerating towns, and villages, and enabling delivery of education, training and skills to enhance the employability of Buckinghamshire residents.
- To improve connectivity across and between Buckinghamshire towns and villages with regional and national centres beyond, working in partnership across boundaries, by securing new sustainable transport infrastructure, upgrading existing infrastructure and improving digital connectivity.
- Support the objectives and Policies of relevant Local Development Plans for the former district areas:
 - Aylesbury – The plan aims to create a sustainable amount and distribution of growth to meet needs by:
 - Creating safe, well-designed developments that are sensitive the areas local character and heritage
 - Provision of affordable and accessible homes to meet housing needs
 - Improve the economy to become more competitive and innovative
 - Delivering improved infrastructure, services and facilities
 - Reduce economic inequality
 - Improve accessibility to education and training
 - Preserve rural character in rural areas
 - Chiltern – Aims to balance growth with sustainability by:
 - Permitting high standard and sustainable development
 - Achieve good standards of provided amenities
 - Enhance existing wildlife and biodiversity
 - Prevention of pollution of all kinds from new developments

- Improving flood protection and preservation of water environments
- Accessibility for people affected by disabilities
- Protect the greenbelt
- South Bucks – The plan strategy has the following key features:
 - Maintaining the Green Belt and protecting it from inappropriate development
 - Focusing development in existing built-up areas avoiding town cramming
 - Minimising the need to travel
 - Retain existing employment sites to maintain strength of the economy
 - Make a contribution to meeting the needs for new dwellings
 - Maintain and enhance town and village centres
 - Environmental protection, conservation and improvement
- Wycombe – The plan has the following strategic objectives:
 - Cherish the Chilterns
 - Strengthen the sense of place
 - Foster economic growth
 - Improve strategic connectivity
 - Facilitate local infrastructure
 - Deliver housing
 - Champion town centres
 - Mitigate climate change

6. Baseline information and key sustainability issues

6.1 Introduction

In order to assess the potential sustainability effects of the LTP5 on Buckinghamshire, it is necessary to establish a baseline against which predicted effects can be assessed, and then to identify issues and trends that are related to each of the environmental, social and economic interests that may be affected by, or affect, the proposed plan. This is in keeping with the SEA Regulations which states that the Environmental Report should provide information on:

"The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme" and "The environmental characteristics of areas likely to be significantly affected" (Schedule 2)

and

"Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC on the conservation of wild birds and the Habitats Directive " (Schedule 2).

Therefore, baseline information plays a fundamental role throughout the stages of the ISA as it provides the evidence base from which to predict and monitor effects of the LTP5. As such, it is first important to understand its current state and then examine the likely evolution of the environment without the implementation of the plan.

6.2 Methodology

Existing baseline information provides the basis for the prediction and monitoring of the effects of the implementation of LTP5 and helps identify sustainability issues and alternative ways of dealing with them (implications and opportunities).

It should be noted that the ISA process does not require the collection of primary data, but relies on the analysis of existing information. As such, where data gaps exist this is highlighted in this report.

As ISA is an iterative process, subsequent stages in its preparation and assessment might identify other issues and priorities that require the sourcing of additional data and/or information and identification of monitoring strategies. This makes the ISA process flexible, adaptable and responsive to changes in the baseline conditions and enables trends to be analysed over time.

Indicators have been selected for their ability to provide objective data that will, over time, offer an insight into general trends taking place. Throughout the assessment process the following issues will need to be addressed:

- What is the current situation, including trends over time?
- How far is the current situation from known thresholds, objectives or targets?
- Are particularly sensitive or important elements of the environment, economy or society affected?
- Are the problems of a large or small scale, reversible or irreversible, permanent or temporary, direct or indirect?
- How difficult would it be to prevent, reduce or compensate for any negative effect?
- Have there been, or will there be, any significant cumulative or synergistic effects over time?

The most efficient way to collate relevant baseline data is through the use of indicators whenever possible (see below). This ensures that the data collation is both focused and effective. The identification of relevant data has taken place alongside the review of other relevant legislation, plans, policies and programmes (Chapter 5 and Appendix B), the identification of sustainability issues (this section) and developing the ISA framework (Chapter 7).

6.3 Data Analysis

Data have been collated and analysed for the following indicators (as detailed in Appendix C):

Environmental Data

- CO₂ emissions
- Climate change
- Local air quality
- Noise / Light pollution ('Tranquillity')
- Biodiversity, fauna and flora (including designated sites)
- Landscape and townscape
- National Character Areas
- Heritage assets
- Green space
- Soil / land classification
- Water quality
- Flooding
- Waste and resources

Economic Data

- Employment
- Long term trends in GVA
- Long term trends in population
- Economic sectors
- Performance gap and sub-regional performance
- Identification of economic centres

Social Data (including Health and Equalities)

- Population and diversity
- General health statistics
- Accessibility
- Road safety and collisions
- Physical activity in children and adults
- Equality target groups
- Multiple deprivation

The baseline data provides an overview of the sustainability characteristics of the LTP5 area. This overview, together with contextual information, is presented in Appendix C. The analysis of the baseline has highlighted a number of key issues in Buckinghamshire. These, together with implications and opportunities arising for LTP5, have been summarised in Table 6-1.

6.4 Data Limitations

It is believed that the data sets available provide a comprehensive overview of the sustainability situation across Buckinghamshire however it should be noted that the assessment is desk based and relies principally on open source data, where available.

6.5 Key sustainability issues, implications and opportunities

The SEA Regulations states that the Environmental Report should provide information on:

"Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC on the conservation of wild birds and the Habitats Directive." (Schedule 2)

This ISA is concerned with the three dimensions of sustainability (social, environmental and economic) and the identification of problems much broader than required by the SEA Regulations.

As such, the following sections provide a description of key baseline data and associated sustainability issues together with a discussion on the implications/opportunities of such issues to LTP5. The analysis of baseline data and sustainability issues has influenced the development of the ISA Framework (see Chapter 7) in terms of formulating sustainability objectives and assessment aid questions. Note that this section has been updated with information received as part of consultation responses made to the ISA Scoping Report and the identification of further relevant information during the assessment process.

It should be noted that, because HIA, EqIA and CSA are also being undertaken, the approach involved the identification of generic HIA, EqIA and CSA key sustainability issues, implications and opportunities and objectives. These have been further developed to ensure a more in-depth level of coverage of issues to satisfy specific HIA and EqIA requirements leading to the development of HIA and EqIA sub-objectives (see Chapter 7). Table 6-1 presents the key issues, implications and opportunities for the Buckinghamshire LTP5.

Table 6-1 - Key Issues, Implications and Opportunities for Buckinghamshire LTP5

Key Sustainability Issue	Implications / Opportunities for LTP5	ISA Objective
Environmental		
<p>Air Quality & Noise</p> <p>Air pollution impacts on public health, the natural environment and the economy.</p> <p>Air quality has improved in the UK over the last sixty years as a result of the switch from coal to gas and electricity for heating of domestic and industrial premises, stricter controls on industrial emissions, higher standards for the composition of fuel and tighter regulations on emissions from motor vehicles. However, poor air quality, particularly due to emissions from motor vehicles, remains a significant issue for community health for the population as a whole but particularly for certain vulnerable or protected characteristic groups such as the elderly, children, those with existing health conditions, those who are pregnant and those living in areas of deprivation.</p> <p>Poor air quality is generally associated with urban/industrial areas and major road infrastructure, and this is reflected in the typical location for Air Quality Management Areas (AQMA), many of which have been designated due to high Nitrogen Dioxide (NO₂) (tailpipe emissions) and Particulate Matter (PM₁₀ and PM_{2.5}) (emissions, tyres and brake wear). Within Buckinghamshire, a total of nine AQMAs have been identified, all of which have been designated for NO₂. Buckinghamshire Council produced an Air Quality Action Plan (2024) aimed at tackling the AQMAs in the area and improving general air quality in the County. The plan focuses on reducing the current levels of pollutants in the County by promoting modal shift to more sustainable modes such as active travel, public transport and electric vehicles (EVs). The UK Government has noted that addressing road</p>	<p>The LTP5 should aim to protect and improve air quality in the County, particularly where it may impact on vulnerable receptors. It should seek to ensure that reducing NO₂ and particulate emissions is a fundamental principle of the Plan.</p> <p>LTP5 should also aim to meet Government targets for air quality and be reflective of appropriate legislation and should consider ecological receptors alongside human receptors when dealing with air quality. The LTP5 should aim to preserve environmental noise quality where it is good and seek to reduce the impact of transportation on identified Noise Action Important Areas and help to maintain tranquility.</p> <p>Examples of how this could be addressed include development and promotion of sustainable modes of transport including active modes, encouraging uptake of EVs (e.g. through developing greater EV infrastructure), smarter travel management such as workplace, residential and school travel plans, creation of inter-modal interchanges, sustainable freight</p>	<p>Protect and improve air quality.</p> <p>Reduce the impact on environmental noise from transportation sources.</p>

transport emissions presents the most significant opportunity to tackle this specific exceedance problem (NO₂ pollution). However, it is important to note that there are other elements which also need to be addressed in addition to road vehicles and this includes reducing emissions from other forms of transport such as rail and aviation.

While noise is a natural consequence of a mature and vibrant society, it can have serious implications for human health, quality of life, economic prosperity and the natural environment. The World Health Organisation (WHO) recognises noise as one of the top environmental hazards to health and well-being in Europe. Environmental noise impacts on public health and quality of life. The most widespread sources of noise pollution and exposure in England are from various forms of transport. Local Authorities are required to create noise maps and produce Noise Action Plans, in line with the Environmental Noise Directive. Noise Important Areas identify 'hotspot' locations where the highest 1% of noise levels at residential locations can be found and therefore highlight where further investigation should be directed. There are 216 Noise Action Important Areas within Buckinghamshire, located on the local rail and road networks.

Likely evolution of baseline

Improving - At the national level air quality is generally improving as industrial practices, energy sources and tighter environmental legislation have contributed to reductions in pollutants. This is the same for noise pollution. Nevertheless, they remain significant issues in many discrete areas and have significant ongoing issues in respect of health.

movements and traffic management interventions.

Greenhouse gas emissions and a changing climate

The release into the atmosphere of greenhouse gases (e.g. CO₂, CH₄, N₂O, O₃) resulting from fossil fuel usage, agriculture, land use change and other human activities has been linked with atmospheric warming and global climate change. By 2050 projection show that England will experience hotter temperatures in both summers and winters. High summer temperatures are expected to become more frequent with a greater number of hot days in summer and autumn. In addition, winter is expected to become wetter with greater seasonal precipitation contrasts, leading to drier summers and wetter winters with less snowfall expected. Changes in temperature and rainfall patterns, along with more frequent extreme weather events, create the situation where a greater degree of resilience will have to be incorporated into plans and proposals. Buckinghamshire Council's Climate Change and Air Quality Strategy sets out a clear commitment to decarbonising the local economy and achieving a net zero future for the county.

As noted by the Department for Transport, domestic transport emissions of road transport accounted for 29% of 2023 UK greenhouse gas emissions. In Buckinghamshire, transport takes up the largest percentage of emissions at 42.5%, which is a higher proportion than in the UK as a whole.

At present, fossil fuel dependency remains high. In 2024, the majority of the energy consumed within the UK (75.1%) came from coal, oil and gas. This is likely to remain so for some time, despite renewable electricity generation contributing 50.4% of total generation, compared to 24.7% in 2022⁵.

The LTP5 should seek to ensure that reducing CO₂ emissions and achieving Net Zero carbon is a core component. Buckinghamshire's Climate Change and Air Quality Strategy aims to "work alongside national Government with the objective to achieve net zero carbon emissions for Buckinghamshire as a whole by 2050"⁶. However, projected levels of traffic growth mean emissions will likely remain an issue. The LTP5 should also seek to ensure that new transport interventions maximise the opportunity for increasing tree / vegetation cover (using native species, ideally of local provenance), where practical, in order to absorb increased amounts of CO₂ from the atmosphere, e.g. through the use of street trees or planting in other areas of transport infrastructure.

As with air quality, other examples of how CO₂ emissions could be addressed include development and promotion of sustainable modes of transport including active modes, encouraging uptake of EVs (e.g. through developing greater EV infrastructure), smarter travel management such as workplace, residential and school travel plans, creation of inter-modal interchanges,

Reduce carbon emissions from transport and contribute to meeting the UKs and Buckinghamshire's net zero carbon targets by 2050

⁵ DESNZ (2025) *UK Energy in Brief*. Available: [UK Energy in Brief 2025](#)

In recent years there have also been marked improvements in vehicle efficiency and an increasing uptake of and provision for EV. Buckinghamshire's Electric Vehicle Action Plan acknowledges the impact that vehicles have on emissions and aim to promote a switch to EVs by those currently making journeys by private cars and vans. As of 2021, there were over 5,000 registered EVs in Buckinghamshire and 175 publicly accessible charging points across the County. The strategy aims to increase the number of electric vehicle charging points to 1,000 spaces within the lifetime of the plan (2022-2027) The UK's Climate Projections show that South East England is projected to experience significant changes, including substantial temperature increases, with hotter, drier summers and warmer, wetter winters. Heatwaves are expected to occur more frequently and last longer. While summer rain may be less frequent, it could arrive in heavier bursts, increasing the risk of flash flooding. Winters will likely bring more steady rainfall, saturating soils and straining infrastructure. Snowfall and prolonged cold spells may become rare, with snowy winters largely disappearing from South East England by the end of the century.

Likely evolution of baseline

Declining - Interventions at the local and regional level have started to reduce the rate of greenhouse gas emissions; and actions outside the LTP5 are contributing to a reduction in emissions. However, the underlying trend points towards a slowing of emissions rather than reversal of trends. Climate change is recognised as a global concern with the UK anticipated to experience hotter, drier summers;

sustainable freight movements and traffic management interventions.

⁶ Buckinghamshire Council (2021) *Climate Change and Air Quality Strategy*. Available: [Targets | Buckinghamshire Council](#)

warmer, wetter winters; and rising sea levels. These trends are anticipated to continue irrespective of interventions from outside the LTP5.

Biodiversity, Fauna and Flora and Geodiversity

There are a wide range of sites designated for nature conservation within Buckinghamshire.

There are three SACs which include Aston Rowant SAC, Burnham Beeches SAC and Chilterns Beechwoods SAC.

There are 69 Sites of Special Scientific Interest (SSSIs) distributed across Buckinghamshire. Some of these are designated for their biological interest and some for their geological interest.

The County has a large ancient tree resource with approximately 1,220 parcels (approximately 10,510 ha) of Ancient Woodland and there is a significant resource of standalone 'veteran trees'.

There are three NNRs in Buckinghamshire including Aston Rowant NNR, King's Wood and Rushmere NNR and Burnham Beeches NNR.

In addition, there are 18 Local Nature Reserves (LNRs) within Buckinghamshire.

Key pressures and risks in respect of biodiversity and nature conservation that are particularly relevant have been identified from air pollution and climate change, which can change distribution of species and habitats.

A Local Nature Recovery (LNR) strategy is being developed for Buckinghamshire and Milton Keynes by Buckinghamshire and Milton Keynes Natural Environment Partnership. The LNR is aimed at prioritising the nature emergency on a local and focused level.

New transport interventions have the potential to impact on the sites of ecological or geological value and more generally on the network of linked multi-functional green spaces, comprising the local green infrastructure, through direct land take for infrastructure

The LTP5 should aim to protect and enhance all sites of biodiversity importance and should place a particular emphasis on protecting sites designated for nature conservation and geodiversity purposes. This could be achieved by ensuring that planning / design of transport interventions avoid sensitive areas and through the adoption of best practice wildlife friendly designs into transport interventions. Where this is not possible, there should be mitigation and compensation for losses. Consideration should also be made of protected and priority species and their habitats. In addition, consideration should be given to those sites designated for their geodiversity.

Opportunities for new habitat creation and enhancement associated with transport developments (or associated areas of public realm) should be explored, e.g. through the use of appropriate locally native species in landscaping plans, through creation of new road verges and enhancement of the existing road verge network. The potential for biodiversity creation in brownfield sites should be also taken into account. There

Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network
Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)

(which may contribute to fragmentation) and construction and operational disturbance (noise, vibration, light pollution, etc.) and emissions / contamination (air, water and soil), though they may also provide opportunities for enhancement. Increased accessibility to designated sites also has the potential to adversely impact on them. Direct road kill can also impact on some species. On the other hand, transport infrastructure can provide opportunities for increased biodiversity, or to aid certain species such as the range of policies developed by Defra and National Highways relating to pollinators. Evidence from Natural England (NECR169⁷) highlights that transport soft estates, including landscaping, verges, and green margins, can significantly enhance green infrastructure, provide habitat networks, and improve ecological connectivity.

Likely evolution of baseline

Uncertain - The designated elements of Buckinghamshire's biodiversity resources are afforded some protection from the pressures of development. Climate change will likely result in decline of some habitats and species, though may afford opportunities for other species, including invasive species.

should therefore be achievement of Biodiversity Net Gain in areas not formally designated, with guidance on the appropriate form of biodiversity enhancement taken from the relevant Biodiversity Opportunity Area (BOA) guidance.

Other opportunities for the LTP5 include the following:

avoid the fragmentation of green infrastructure, which contributes to protecting natural habitats and biodiversity; the need for cohesive habitat networks to help habitats and species adapt to the consequences of climate change; enhancement of the green infrastructure through, for example, footpaths, cycle lanes and other public rights of ways. Increased accessibility to appropriately designed multi-functional green infrastructure can play a significant role in diverting access pressure away from more sensitive sites, such as those designated for wildlife and geological conservation.

In parallel with the ISA of the LTP5, HRA is being undertaken which will identify the internationally designated nature

⁷ Natural England (2014) *Review of literature: how transport's soft estate has enhanced green infrastructure, ecosystem services, and transport resilience in the EU (NECR169)*. Available: [Review of literature: how transport's soft estate has enhanced green infrastructure, ecosystem services, and transport resilience in the EU - NECR169](#)

	<p>conservation areas to avoid, or where this is not possible, appropriate mitigation measures to identify very early on in the development of LTP5.</p>	
<p>Water Resources & Water Quality</p> <p>There are considerable pressures on water resources with resulting major impacts on many of the waterbodies across the UK. By 2050, England as a whole, water companies are looking at a shortfall of nearly 5 billion litres of water per day between the sustainable water supplies available and the expected demand⁸. This is more than a third of the 14 billion litres of water currently put into public water supply. As of July 2021, 15 water companies in England were designated as areas of serious Water Stress⁹. For the purposes of taking a holistic approach to management of water resources and to address the pressures on the water environment, under the Water Framework Directive (WFD), the UK has been divided into a series of River Basin Districts (RBDs). The two RBDs of relevance to the LTP5 are the Thames and Anglian RBDs.</p> <p>As with most water bodies in England, there are a range of significant water management issues manifested in these RBDs. Pollution from towns, cities and transport is a key challenge noted for both RBDs with a number of reasons for not achieving good (RNAG) identified for each RBD (172 for Anglian RBD and 441 for Thames RBD). Transport continues to be a polluter for each of these basins but is not a main polluter for any with ‘physical modifications’, waste water and rural areas being greater influences in all cases. Water runoff from roads, containing pollutants such as</p>	<p>The LTP5 should seek to prevent pollution of water bodies (including groundwater) both during the construction and operation of any transport intervention. This could be achieved via the appropriate use of SuDS or other appropriate measures and new approaches in road drainage design / transport interventions to enhance water quality and reduce pollution and flood risk. Risk to all types of water bodies (not just main rivers) is to be considered during any scheme design.</p> <p>Recognition of the objectives of the WFD should be made and all opportunities to help meet the objectives of the WFD should be taken when possible.</p> <p>Green-blue Infrastructure should be considered in the LTP5 in the context of the aims of the WFD and how this can realise these, as well as other wider, benefits and objectives.</p>	<p>Protect and enhance the water environment</p>

⁸ [A summary of England’s revised draft regional and water resources management plans - GOV.UK \(www.gov.uk\)](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/97822/summary_of_englands_revised_draft_regional_and_water_resources_management_plans.pdf)

⁹ [Updating the determination of water stressed areas in England - consultation response document \(publishing.service.gov.uk\)](https://publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/97822/summary_of_englands_revised_draft_regional_and_water_resources_management_plans.pdf)

oil, as well as tyre and brake degradation, is identified as being a key contributor to water quality issues. 18% of water body failures in England are caused by road water runoff, as per the WFD, with 1 million instances in the UK where water from roads meets watercourses (outfalls)¹⁰.

Groundwater provides a third of drinking water in England, and it also maintains the flow in many rivers. Protecting these sources will help ensure that water is safe to drink.

In order to help protect sources, Source Protection Zones (SPZs) for groundwater sources such as wells, boreholes and springs used for public drinking water supply have been defined. Across Buckinghamshire there are three Drinking Water Safeguard Zones for Surface Water: Lower Thames (SWSGZ4016), Great Ouse (SWSGZ1013) and Great Ouse (SWSGZ1012).

Likely evolution of baseline

Declining – according to the Environment Agency, water quality in the UK is declining, with all groundwater and surface water in England being polluted. Run off from transport was noted as one of the main causes of water pollution (18%) in surface water.

Significant challenges remain as noted in the River Basin Management Plans.

Adaptation to a changing climate and flooding

Current observations indicate that the UK is continuing to warm. 2024 was provisionally the fourth warmest year on record for the UK¹¹. With a mean temperature of 9.78°C, it follows 2022, 2023 and

LTP5 should seek to ensure that transport infrastructure minimises any negative effects arising from flooding and avoids where possible areas of highest flood risk.

Maximise adaptation and resilience of the transport network to the effects of a changing climate, including

¹⁰ New Civil Engineer (2024) *Road runoff pollution causing ‘catastrophic damage’ to UK’s waterways*. Available: [Road runoff pollution causing ‘catastrophic damage’ to UK’s waterways | New Civil Engineer](#)

¹¹ Met Office (2025) *2024: provisionally the fourth warmest year on record for the UK*. Available: [2024: provisionally the fourth warmest year on record for the UK - Met Office](#)

2014. Eight of the twelve months of the year saw temperatures above the 1991-2020 average.

Annual precipitation has increased across the UK in the last few decades. 2024 was another relatively wet year with the UK recording 1242mm, 107% of average rainfall¹¹. It was particularly wet across parts of central southern England with a quarter to a third more rain than normal fairly widely. Buckinghamshire recorded its second-wettest year in records from 1836.

These general trends seen in the UK are expected to be similar in Buckinghamshire.

Significant proportions of the UK population are at risk from flooding, although the degree of risk varies, with a range of factors affecting potential risk. The Flood Directive (2007/60/EC) was transposed into English law in the form of the Flood and Water Management Act 2010 (England & Wales). The Directive requires the production of flood hazard maps and flood management plans. In relation to the LTP5 area, there are Flood Risk Management Plans in place to cover the relevant river basin districts¹². These flood management plans are at the river basin district level. At the local authority level, Buckinghamshire adopted their Local Flood Risk Management Strategy in 2024¹³. Five overarching objectives set the framework for the Strategy, including:

- Develop and promote better understanding of flood risk from all sources, now and in the future.
- Work in partnership to build the resilience of our communities to flood risk and climate change.
- Support the development of places that are more climate resilient.

Flood risk should be considered in any design and the implementation of SuDS and other similar appropriate measures or new approaches should be considered and encouraged where feasible.

LTP5 should ensure that where transport interventions require a land take from the floodplain there are appropriate compensatory measures put in place.

LTP5 should seek to explore the possibilities for creating blue infrastructure which can both help to manage localised flood risk and simultaneously create new habitats.

LTP5 should recognise the challenges that a changing climate will bring and aim to reduce the impacts. More frequent and extreme weather events should be considered in any infrastructure design and maintenance procedures / regime.

through reducing the risk of flooding

¹² Buckinghamshire Council (2025) *Flood risk strategies, plans and assessments*. Available: [Flood risk strategies, plans and assessments | Buckinghamshire Council](#)

¹³ Buckinghamshire Council (2023) *Local Flood Risk Management Strategy*. Available: [Local Flood Risk Management Strategy | Buckinghamshire Council](#)

Manage flood risk through our capital programme, using sustainable techniques, nature-based solutions and adaptive pathways in delivering our flood risk management activities, projects, and schemes.

Improve innovation, skills and resourcing in flood risk management. The Flood Risk Management Strategy Action Plan introduces a series of actions aligned with these objectives.

Across Buckinghamshire, 3,357 properties are at risk of fluvial flooding and 18,380 properties are at risk of surface water flooding. Flood risk presents a significant planning issue in the development of major infrastructure projects, both in terms of potential direct impacts on the project itself and indirect impacts associated with works (such as increased run-off). In relation to transport infrastructure, there is a direct flood risk to the infrastructure itself, e.g. roads, rail lines, or development of other transport infrastructure can aggravate existing flood risk in a wide range of ways, for example by requiring land take from flood plains, or by changing the drainage regime, etc.

Expected climate change impacts to transport infrastructure include increased risk of extreme flooding (from more frequent “heavy precipitation events”) and more extreme weather events from higher temperatures and increased wind and rain in winter months.

This is likely to result in:

- Direct impacts of flooding on transport infrastructure, now and into the future.
- Secondary impacts of flooding such as flood damage to bridges, embankments, surfaces etc.
- Making driving more hazardous through for example higher wind speeds, greater levels of water on carriageways etc.

Other climate change impacts to transport infrastructure could include:

Impacts from extreme temperatures such as rail buckling and passenger discomfort, or for those utilising active travel modes.

Increased disruption to operations.

Evidence from Natural England (NECR169¹⁴) highlights that transport soft estates, including landscaping, verges, and green margins, can contribute to climate change resilience across the transport network. Green infrastructure offers opportunities to manage stormwater, reduce heat impacts, stabilise slopes and improve overall transport resilience.

Likely evolution of the baseline

Declining - Climate change is recognised as a global concern with the UK anticipated to experience hotter, drier summers; warmer, wetter winters; and rising sea levels. These trends are anticipated to continue irrespective of interventions from outside the LTP5.

Land use, soil and contaminated land

Buckinghamshire has a mixed urban and rural landscape. While predominantly rural, it contains several urban centres including High Wycombe and Aylesbury. The rural areas are interspersed with market towns and villages, such as Amersham, Buckingham and Chesham.

Soils in England are already, and continue to be, degraded by human activity including intensive agriculture, historic levels of industrial pollution and urban development (including transportation networks), making them vulnerable to erosion (by wind and water),

Soil is a non-renewable resource and is vulnerable to erosion, degradation and contamination. In addition, historic land uses have contributed to contamination across large areas.

The LTP5 should seek to make best use of areas that are already urbanised and provide an opportunity for regeneration / improvements to land quality. Where use of agricultural land is unavoidable, measures

Protect, enhance and promote geodiversity

¹⁴ Natural England (2014) *Review of literature: how transport's soft estate has enhanced green infrastructure, ecosystem services, and transport resilience in the EU (NECR169)*. Available: [Review of literature: how transport's soft estate has enhanced green infrastructure, ecosystem services, and transport resilience in the EU - NECR169](#)

compaction and loss of organic matter.

Many areas of land in the UK have been contaminated by past industrial and other human activities, including former factories, storage depots and landfills. It is worth noting that Buckinghamshire possesses a strong industrial heritage. Transportation infrastructure is also a frequent source of land contamination. Land could be contaminated by a wide range of harmful substances such as oils and tars, heavy metals, asbestos and chemicals.

By its nature, it is often very difficult to know where land has been contaminated previously or is currently suffering ongoing contamination. As such the number of known sites of contamination is likely to be only a very small fraction of the overall number of potentially contaminated sites.

The geology of Buckinghamshire is primarily composed of sedimentary rocks, including limestone, mudstone and clay formations, largely dating from the Jurassic and Cretaceous periods. Chalk forms the central backbone of Buckinghamshire, running from east to west and forming the scarp face of the Chiltern Hills.

The geology of Buckinghamshire is predominantly composed of sedimentary rocks, including limestone, mudstone, and clay formations, primarily dating from the Jurassic and Cretaceous periods. A prominent geological feature is the chalk belt, which forms the central backbone of the county, extending east to west and shaping the distinctive scarp face of the Chiltern Hills.

Likely evolution of the baseline

Declining - it is likely that greenfield sites will experience increasing pressure for development in preference to the complexities of redeveloping previously developed and potentially contaminated sites. This could reduce available high quality soil resources and fail

should be taken to avoid those areas of the highest quality and aim to protect soil and agricultural holdings through avoidance of impacts such as contamination or severance.

The LTP5 must protect soils as they are essential for achieving a range of important ecosystem services and functions. In particular, the LTP5 must ensure that soil resources are protected during the construction phase of interventions.

Dealing with the past pollution / contamination legacy is a major issue and should be addressed at all opportunities due to its ongoing environmental impact. The LTP5 should seek to avoid land that is covered by Mineral Safeguarding Area designations, to prevent the sterilisation of key mineral resources.

to realise the potential of existing capacity within existing urban and previously developed areas. Remediation of contamination is likely to remain sporadic and reflective of individual site requirements.

Cultural Heritage

There are a range of historic and cultural heritage features located across the County and which span the full range of human settlement, from the prehistoric to the present. These include Scheduled Monuments, Registered Parks and Gardens and Listed Buildings. Numbers of sites are as follows:

- Listed Buildings – 5,031
- Registered Parks and Gardens – 41
- Scheduled Monuments – 147
- Buildings listed on Heritage at Risk – 26

It is important to note that the nature of cultural heritage features means that not all are known at present; in particular, buried archaeological remains.

Likely evolution of the baseline

Stable / Declining - Designated heritage assets benefit from protection that will continue without the LTP5. However, there is a risk of uncoordinated and piecemeal development resulting in the successive erosion of the quantum and integrity of the County’s cultural heritage resource.

Landscapes and townscapes

Buckinghamshire covers a diverse area containing a wide variety of landscapes, ranging from the rolling chalk escarpments of the Chiltern Hills to the lowland clay vales and river terraces of the Thames and Colne valleys. To the southeast, the Chilterns National

The LTP5 should aim to protect and preserve designated and non-designated heritage assets and their contexts and settings.

Transport related development / infrastructure should be sensitively designed to be sympathetic to its existing character and quality and opportunities for improving settings should be examined. Better accessibility to the historic environment should also be an aim for LTP5 where appropriate.

Where schemes would involve physical development that could affect previously undiscovered archaeological assets the design of the scheme and site selection should be informed by early investigation of the potential archaeological interest of the affected land.

Protect and enhance cultural heritage assets and their settings, and the wider historic environment

The LTP5 should seek to preserve and enhance the character of Buckinghamshire’s landscape and townscape by ensuring that its integrity and valuable natural open space is not lost.

Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider

Landscape offers wooded uplands and steep valleys, while the Vale of Aylesbury to the northwest is characterised by open farmland, meadows, and historic market towns. The landscape is rich in natural and cultural features, including ancient woodlands, rivers such as the Thames and Great Ouse, and a patchwork of hedgerows and field systems that reflect centuries of agricultural use. Settlement types across Buckinghamshire range from isolated farmsteads and hamlets nestled in rural areas to larger towns such as High Wycombe, Aylesbury, and Amersham, which serve as key centres for commerce, transport, and public services. There are eight National Character Areas (NCSs) within Buckinghamshire. There are a range of pressures on landscape, many of which are altering landscapes in a direction which could be regarded as inconsistent with the traditional landscape vernacular of the area. These changes are a reflection of the fact that the landscape of the UK has changed over many years due to a range of issues such as urbanisation, changes to agriculture, reduced tranquillity, loss of habitats and forests, etc. Chilterns National Landscape stretches from the southeast of the plan area to west. There are 188 Conservation Areas distributed throughout the LTP5 area.

Likely evolution of the baseline

Stable - Many of the County's most exceptional landscape and townscapes benefit from protection through designations that will persist in the absence of the LTP5. In general terms, modern design / landscaping principles and interested parties expectations are promoting a renewed focus on the quality of scheme design and this trend is likely to continue, though risks from increased urbanisation and infrastructure development remain.

Design should note the local vernacular architecture when possible. The LTP5 should also aim to ensure that transport interventions avoid sensitive areas and respect particular landscape or townscape settings, with consideration made of design quality in both an urban and rural setting. Opportunities for landscape enhancement should be explored, e.g. through sympathetic design and enhancements to existing landscape improvement areas, as well as new planting opportunities (using native species) associated with transport development. Where a scheme would involve physical development within the National Landscapes within the plan area, guidance should be sought from the relevant adopted National Landscapes Management Plan, and through consultation with the relevant National Landscapes Office. Where a scheme would involve physical development within a Conservation Area or a wider area for which a townscape/urban character appraisal has been undertaken, the design of the scheme should take account of relevant guidance for the Conservation Area / townscape character area.

landscapes, and townscapes and enhance visual amenity

Waste Management and Resource Efficiency

The transport sector can impact on and interact with a wide range of resources such as through energy (fuel) use, use of construction materials (aggregate, concrete, etc.), waste generation and disposal, etc.

New transport interventions' construction contributes to increase the levels of waste generated if building materials are not efficiently used / reused. With more waste being produced, trip kilometres to transport such waste is likely to increase, thus generating more traffic.

Transport is the largest energy consuming sector in the UK, representing 42% of total energy consumption in 2023¹⁵. Between 2022 and 2023 transport energy consumption increased by 3.6% to 52.6 million tonnes of Oil equivalent (mtoe). However, this is still 6.5% below the 56.3 mtoe consumed in 2019 before the impact of travel restrictions associated with the COVID-19 pandemic. Air travel increased in 2023, with usage nearing pre-pandemic 2019 levels. Energy use by road vehicles showed steady growth between 1970 and 1990, increasing by an average of 2.8% per annum. Growth then remained fairly stable until it peaked at 29,622 kilotonne of oil equivalent (ktoe) in 2007, the year prior to the 2008 recession. Growth in consumption turned positive again in 2014. Traffic in 2022 was impacted by the travel restrictions that were in place across the country between March 2020 and March 2022 due to the coronavirus (COVID-19) pandemic. Overall traffic levels in 2022 were estimated to be 1% higher than 2021 but remain below pre-pandemic 2019 levels. Motor vehicle traffic on Great Britain roads increased by 8.8% between 2021 and 2022. Traffic in 2022 was

The LTP5 should seek to promote a circular economy by promoting re-use, resource efficiency and minimising waste. The LTP5 should seek to reduce consumption of resources, such as construction materials, e.g. through encouraging the use of recycled or secondary materials. This will also reduce the need to transport these materials and transport the waste by-products.

The LTP5 can also help reduce the consumption of fuel by promoting a shift to more sustainable forms of transport such as active modes like cycling and walking, as well as EV's.

Appropriate management and maintenance of transport infrastructure can meet waste and resource goals as well as a range of other objectives.

Promote sustainable use of resources and natural assets

¹⁵ DESNZ (2024) *Energy consumption in the UK*. Available: [Energy Consumption in the UK 2024](#)

approximately 4.4% lower than when compared to 2019 pre-pandemic levels.

Air passenger travel dropped sharply due to COVID19 restrictions, but partially recovered by 2022, leading to a 51% improvement in energy intensity. However, energy intensity remained higher than in 2019, likely due to reduced aircraft occupancy.

Between 2021 and 2022, petroleum consumption increased by 96% for air transport, 47% for water transport and 7% for rail.

As of January 2025, there were 73,334 public electric vehicle charging devices installed in the UK. It is anticipated that uptake of EV will increase across the UK.

Likely evolution of the baseline

Uncertain - Continued growth in the county will contribute towards a trend of increased waste and resource use. While new approaches are helping to shift towards greater efficiencies in resource use and adherence to the waste hierarchy, underlying waste generation volumes are anticipated to increase cumulatively. Energy usage within transport is falling and there will be an increase in the uptake of EVs (particularly when the EV charging network fully develops) alongside increased decarbonisation of electricity supply.

Economic

Economy, Employment and Skills

In 2023, Buckinghamshire's Gross Domestic Product (GDP) was £21.4 billion¹⁶, the largest local authority economy in the South East. The County's GDP per head stood at £37,698, lower than the national average of £40,382. Buckinghamshire's real GDP fell by 1.4%

The LTP5 should improve transport links within and between employment (commercial and industrial) centres and improve connectivity to support business-to-business markets and access to wider

Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all

¹⁶ Buckinghamshire Economic Intelligence Observatory (2025) *Economic Output & Productivity*. Available: [Economic Output & Productivity - Buckinghamshire Economic Intelligence Observatory](#)

between 2022 and 2023, with average annual growth of -0.6% since 2019, leaving output slightly below pre-pandemic levels.

Buckinghamshire has one of the least self-contained labour markets in England, with significant commuter flows both into and out of the county prior to the COVID-19 pandemic. The rise of home working has since reduced travel to workplaces both within and out of Buckinghamshire. The service sector provides 85% of jobs in Buckinghamshire. Health is the largest employer, followed by education, retail, and wholesale, where local job numbers are double the national average, especially in pharmaceuticals, machinery, and software. Several other sectors also outperform national employment levels.

Some of the most significant challenges facing Buckinghamshire reflect those seen in rural areas across the country, including an ageing population, limited access to key services, and ongoing pressures to meet housing demand.

Buckinghamshire's Gross Value Added (GVA) per hour worked in 2023 was £40.20, lower than the national average of £42.40.

Buckinghamshire's GVA has been increasing since 2016.

From April 2024 to March 2025, 85.3% of those in Buckinghamshire were economically active while 82.2% of the population was in employment. These figures are higher than in Great Britain, where 78.5% were economically active and 75.4% were in employment.

The population of Buckinghamshire is projected to increase by 3.4% between 2020 and 2030¹⁷. The majority of the forecast population growth is anticipated in the 15 – 19 age band which is estimated to grow by 20.3%, followed by the 60+ age group, expected to grow by

and highly skilled labour markets. The LTP5 should also seek to enhance the rural economy.

Improved connectivity should be achieved by sustainable and affordable modes of transport and/or improved digital connectivity.

Reliability and resilience of transport links should be improved to enhance further the productivity and competitiveness of Buckinghamshire's economy.

The LTP5 should seek to reduce road congestion (therefore reducing the time to commute and transport goods).

The LTP5 should seek to limit the rising costs associated with travel to assist in enhancing accessibility to education, training, cultural and leisure activities and employment opportunities within the County.

The LTP5 should consider that high quality green and blue infrastructure can play an important role in enhancing the visual appeal of transport infrastructure and help to encourage new inward investment, as well as help to retain high skilled labour.

¹⁷ Buckinghamshire Council (2024) *Joint Strategic Needs Assessment: Data Profile Protected Characteristics*. Available: [Population projections for Buckinghamshire 2020 to 2030 | Buckinghamshire Council](#)

17.7%.

The impact of COVID-19 and an increase in working from home, along with greater online commerce, will likely require a greater digital connectivity, which will help to reduce transport need.

Likely evolution of the baseline

Uncertain – while Buckinghamshire is likely to remain a strong location for employment, supported by a highly skilled workforce, it is not immune to wider macroeconomic uncertainties, including the lasting impacts of the COVID-19 pandemic and challenges related to Brexit.

Patterns of land use and transport

Buckinghamshire is a mixed urban and rural area with an approximate density of 370 people/km² which is lower than the UK density of 450 people/km². The south of Buckinghamshire is densely populated, and the north is more sparsely populated.

Strategic transport connections in Buckinghamshire include fast rail links such as the Chiltern Main Line, which connects key towns like High Wycombe and Aylesbury to London Marylebone. Within Buckinghamshire is the M40 motorway as well as various single and dual carriageways.

Car usage is high in the County and the 2021 Census indicates that 11.5% of households have no cars or vans.

In Buckinghamshire, the average commuter travels nearly 11 miles (17.7km) each way to work. Between 2022 and 2023, 15.3% of adults walked for travel at least three days per week.

Likely evolution of the baseline

Stable / Uncertain – Buckinghamshire is expected to retain its largely rural character, with much of the population concentrated in urban

The LTP5 should support a co-ordinated approach to land use (including development of housing) and transport planning across the county and prioritise investment in this regard.

A growing EV charging network will have both implications for the energy supply sector and transport sector which the LTP5 will need to address.

Support the wider coordination of land use and energy planning across Buckinghamshire

centres such as High Wycombe, Aylesbury, and Amersham. However, future patterns may shift due to rising levels of homeworking and e-commerce, which could alter commuting behaviours and the distribution of economic activity across the county.

Social

Population and Health

As of mid-2024, the population across Buckinghamshire is approximately 573,953 people with the largest settlements including High Wycombe, Aylesbury, Amersham, Buckingham and Chesham. Life expectancy is higher than the national average for men and women.

In Buckinghamshire, 1.9% of the population were claiming out of work benefits in 2025 which is a lower rate than England (4.0%).

In 2024, the proportion of the population in Buckinghamshire reported to have a long term Musculoskeletal (MSK) problem was 15.8%. This is lower than the average for England (17.9%).

The proportion of people with a long-term illness or disability under the Equality Act was 13.6% in 2021 which is lower than England (17.7%).

The County has a lower rate of adult smokers at 10.7% than England at 12.4%.

In Buckinghamshire, 73.7% of the population were classed as physically active adults, which is higher than the English average of 67.4%. However, 65.9% of adults were estimated to be overweight or living with obesity in Buckinghamshire, compared to 64.5% in England.

Buckinghamshire has a lower mortality rate from cancer in under 75-year olds (99.2 per 100,000 people) compared to the national average (120.8 per 100,000 people).

The LTP5 should seek to provide accessible and affordable transport, enabling good access to education, employment, fresh food, friends and family, leisure and health services and facilities, which would particularly benefit those in low income groups.

Indirectly, health levels could be improved through secondary effects of policies to reduce air pollution; decreasing noise pollution as well as traffic congestion. Improving walking and cycling facilities for both purposeful and recreational trips will both improve physical activity levels as well as decrease air pollution and traffic. Improving access to and provision of greenspace and improving the physical environment in general may increase both informal and formal physical activity levels, as well as create a general sense of wellbeing.

Improve health and well-being for all citizens and reduce inequalities in health

The under 75 mortality rate from cardiovascular diseases in Buckinghamshire is 59.0 per 100,000 people, also lower than England (77.4 per 100,000 people).

It is important to note that COVID-19 has impacted different groups within the population in different ways.

Transport plays a crucial role in enabling residents to access GP surgeries, pharmacies, urgent care, and hospital appointments. This is particularly important where patient flows cross the Buckinghamshire/West Northamptonshire boundary, requiring reliable and convenient transport links. Limited transport options can create barriers to accessing timely care, especially for those without a car or living in rural areas.

Natural England research (EIN065¹⁸, EIN066¹⁹) highlights strong links between access to natural environments and improved physical activity, mental wellbeing, reduced stress, and enhanced overall health. This demonstrates the importance of high-quality natural environments as determinants of health and wellbeing within Buckinghamshire.

Likely evolution of the baseline

Uncertain - While population levels are likely to continue to rise, there is uncertainty over migration levels. Population profiles are also likely to continue to get older – this will likely result in changes to overall health outcomes with an increased number of long-term conditions.

Population and Equalities

In Buckinghamshire under 16-year-olds make up approximately 20.0% of the population, whilst 16 to 64-year-olds make up

The LTP5 should aim for all citizens the opportunity to access transport and related services that come with this.

Promote greater equality of opportunity for all citizens, with the desired

¹⁸ Natural England (2022) *Links between natural environments and mental health (EIN065)*. Available: [Links between natural environments and mental health - EIN065](#)

¹⁹ Natural England (2022) *Links between natural environments and physical health (EIN066)*. Available: [Links between natural environments and physical health - EIN066](#)

approximately 61.0%. Older people (those aged 65 years and over), make up 19.1% of the county's population. In England, the percentage of people between 0-15 is 18.4%, working age population is 62.9% and those aged 65+ is 18.7%. In England 51.0% of the population are female, and the remaining 49.0% are male. The gender split for Buckinghamshire, is similar to the English proportions, with 49.1% male and 50.1% female. Gender-based violence in public space (e.g. street harassment) is a barrier to safe mobility and participation in public life for women and girls. In the UK, 86% of women aged 18-24 and 71% of women of all ages have experienced sexual harassment in public spaces, including public transport. The gendered division of domestic and caring responsibilities also means women make more frequent, short journeys throughout the day, whereas men make fewer but longer journeys during peak hours.

In 2021, 12.4% of the County's residents identified their ethnic group within the "Asian, Asian British or Asian Welsh" category. This is higher than the English average of 9.6%. 79.9% of people in Buckinghamshire identified their ethnic group within the "White" while 3.5% identified their ethnic group within the "Mixed or Multiple" category. The proportion identifying as "Black, Black British, Black Welsh, Caribbean or African" was 2.6%.

In the 2021 census, 83.4% of residents in this County stated they were born in the UK. Outside of the UK, the most represented area was the Middle East and Asia with 6.1% of the population.

In 2021, 34.2% of Buckinghamshire residents reported having "no religion", while the largest supported religious group was Christianity at 47.2% of people.

Deprivation is dispersed across England. 61% of local authority districts contain at least one of the most deprived neighbourhoods

The Equalities Act 2010 provides a legislative framework to protect the rights of individuals and advance equality of opportunity for all.

outcome of achieving a fairer society

When considering approaches to community engagement, it is important to understand the diversity of the populations and their needs and experiences as individuals.

This requires examining the different issues, barriers and priorities for women and men and meeting any identified requirements. This may include, for example, not discriminating against employees because of their gender, ensuring both men and women have the same access to educational facilities, and considering safety and security issues for travelling, as research has shown that women experience more perceived safety issues when travelling alone than men. Similarly, consideration should be given to the transport needs and concerns of diverse groups in society, whether it be due to issues such as race or disability – in short, not all groups in society can take full advantage of transport opportunities.

in England. Buckinghamshire overall has relatively low levels of deprivation as measured by the IMD compared to the country as a whole, ranking 7th least deprived out of 151 Local Authorities nationally. Higher levels of deprivation are concentrated in Aylesbury, High Wycombe, Burnham, Chesham, and Denham. Although EV uptake is increasing in Buckinghamshire, As electric vehicle uptake increases, equitable access to charging infrastructure is essential. Provision should consider households without off-street parking and areas with higher deprivation to avoid creating or reinforcing transport-related inequalities. Buckinghamshire Electric Vehicle Action Plan 2022 – 2027 recognises that there are limited options to install charging infrastructure where there is no access to off-street private parking space. Residents without access to off-street parking might therefore be discouraged to shift to EVs for this reason. Some local authorities have begun trialling systems to allow charging across pavements, however, there remain several technical and regulatory difficulties with these. Key areas that require more on street charging provision are concentrated in denser urban areas, including Aylesbury, High Wycombe, Amersham, Chesham, Gerards Cross, Wendover, and the outskirts of Slough and Maidenhead.

Likely evolution of the baseline

Uncertain – it is unclear how ongoing economic uncertainties will affect the diversity of Buckinghamshire. While overall wealth levels may improve relative to national trends, pockets of deprivation are likely to persist, particularly in more isolated or economically vulnerable areas.

Population

The crime rate in Buckinghamshire is relatively low compared to other areas of the country. During the period of 2024/2025, the

The LTP5 should consider interventions that engender a sense of safety and reduce crime and fear of crime through indirect

Promote community safety and reduce crime and fear of crime for all

overall crime rate in Buckinghamshire was 55.3 crimes per 1,000 people²⁰. This is lower than the figure for England (86.1 per 1,000 of the population in 2024/2025).

The most common recorded crime across the plan area was classified as domestic abuse, followed by neighbourhood crime. In 2023, there were 683 reported road collisions across the County, of which 11 were fatal.

Likely evolution of the baseline

Stable / Uncertain – crime is closely linked to economic outcomes and it is unclear how economic uncertainties (post COVID-19 and Brexit as well as other global issues) will be reflected in crime statistics. It is noted, for example, that reports of sexual harassment on public transport have jumped 63% across Britain, comparative to pre-pandemic. Overall, it is anticipated that Buckinghamshire will continue to have a lower crime rate relative to other parts of England. The LTP5 should consider interventions that engender a sense of safety and reduce crime and fear of crime through indirect measures via incorporation of design features such as additional lighting, CCTV and rapid response by police / security on transport, active street frontages, development reaching ‘secured by design’ standards.

Interventions that discourage incidences of anti-social behaviour and opportunistic crime, often attributed to ‘boredom’ or a ‘lack of things to do’, through increasing accessibility to community facilities, especially open and green space and leisure facilities.

measures via incorporation of design features such as additional lighting, CCTV and rapid response by police / security on transport, active street frontages, development reaching ‘secured by design’ standards.

Interventions that discourage incidences of anti-social behaviour and opportunistic crime, often attributed to ‘boredom’ or a ‘lack of things to do’, through increasing accessibility to community facilities, especially open and green space and leisure facilities, should be considered in the LTP5.

citizens

²⁰ Safer Buckinghamshire Partnership (2025) *Annual Report 2024/25*. Available: [Safer Bucks Annual Report](#)

6.6 Population and health

As set out in Section 2, Health Impact Assessment (HIA) is a practical approach used to judge the potential health effects of a policy, programme or project on a population, particularly on vulnerable or disadvantaged groups.

From a review of the population and human health baseline (presented in Appendix C) for the Buckinghamshire area as a whole, it has been possible to identify a number of groups who, along with the population as a whole (wider groups) could be considered vulnerable in terms of their health and wellbeing. These groups and the rationale for their identification is outlined in Table 6-2 below.

Table 6-2 - Buckinghamshire Vulnerable Groups

Groups	Relevant receptor / medium	Explanation	Are these groups present within LTP5 area?
Wider Groups – adults / working people	Residents living in houses, operators and users of community land and facilities, business owners and users, users of open space, recreation and leisure activities, Non-motorised Users (NMU), public transport users and vehicle travellers	The key challenge to the physical health, mental and social wellbeing of the local resident population arises from inactivity and unhealthy lifestyle choices and are also linked to the local transportation and road network. Residents of properties in study area, employees and customers at the retail, commercial and industrial businesses interspersed throughout the area, walkers and cyclists using recreation routes and the local footpath and cycleway network, visitors to nearby visitor attractions, and public transport users are likely to be most exposed to health impacts.	Yes – Buckinghamshire had an estimated population of 573,953 in mid-2024. The overall proportions for the male/female population (49.1%/50.9% respectively) is similar to of England as a whole (49.0%/51.0%). As would be anticipated, the population profile covers all age groups, though there is a general trend toward an ageing population. 18.7% of the population are aged 65 years and over, mirroring to the England average of 18.7%.
Sensitive Group - Families with children and adolescents, (pregnant women, babies, children and adolescents)	Residential houses, community services and facilities, open space, greenspace and recreational facilities, PRoW, local footpaths and cycleways, Schools nurseries, day care centres, residential houses	Children and adolescents constitute a sensitive population group due partly to their need to be able to move around freely to and from school, open space, greenspace and recreational activities, whilst they lack the experience and judgement	Yes – within the population of Buckinghamshire, children within the ages of 0 – 15 make up 20.0% of the population, which is higher than the English average of 18.4%.

		<p>displayed by adults when moving around in traffic and public spaces²¹ and when using public transport and related infrastructure.</p> <p>Hence, children and adolescents as pedestrians²² and cyclists are at elevated risk from danger distributed by motorised transport.</p> <p>Furthermore, children are more sensitive than adults to air pollution²³, noise²⁴, odour²⁵ and other environmental factors and their bodies and minds are less able to deal with them.</p> <p>Particularly susceptible children are those from low-income²⁶ and/or black and minority ethnic (BME) backgrounds²⁷ and/or living in deprived areas.</p>	
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²¹ World Health Organisation (2018, December) Adolescents: health risks and solutions (<https://www.who.int/news-room/fact-sheets/detail/adolescents-health-risks-and-solutions>)

²² Child Accident Prevention Trust (2013) Child death from road traffic accidents (<http://makingthelink.net/child-deaths-road-traffic-accidents>)

²³ World Health Organisation (2018) Air pollution and child health: prescribing clean air (<https://www.who.int/ceh/publications/air-pollution-child-health/en/>)

²⁴ World Health Organisation Data and statistics (<http://www.euro.who.int/en/health-topics/environment-and-health/noise/data-and-statistics>)

²⁵ Agency for Toxic Substances and Disease Registry (2015, October) (<https://www.atsdr.cdc.gov/odors/faqs.html>)

²⁶ British Medical Journals, Wickham. S, Anwar. E, Barr.B, Law. C, Taylor-Robinson.D (2016, July) Poverty and child health in the UK: using evidence for action (<https://adc.bmj.com/content/101/8/759>)

²⁷ Parliamentary Office of Science and Technology (2007, January) (<https://www.parliament.uk/documents/post/postpn276.pdf>)

<p>Sensitive Group – People who are physically or mentally disadvantaged (elderly people, people with physical disabilities, people with other health problems or impairments)</p>	<p>Residential houses, retirement / Care homes, community services and facilities (including health centres / clinics and hospitals), open space, PRoW and local footpaths</p>	<p>Elderly people constitute a sensitive group as they are more sensitive than young and middle-aged adults. Generally, the older people are, the slower their movement and reactions and the poorer their hearing²⁸. They can be more at risk from injury and may fear falls, steps or lack of suitable footpaths, lack of safe crossing points and short crossing times at safe crossing points and other aspects of the surrounding built environment²⁹. This can deter them from outdoor activity, especially walking, whereas walking is critical for muscle strength and reduces the risk of falls amongst other benefits. Elderly people can also feel more sensitive when using public transport^{30,31}. They also often</p>	<p>Yes – the population in Buckinghamshire in the age range 65+ is currently 19.1%. Numbers in this age group are 110,535 and could grow over the coming years as the number of people in the age range 50 to 64 years rose by just under 15,400 (an increase of 15.8%) between 2011 and 2021. Numbers of those 85 years and over are 16,446. 13.6% of the population in Buckinghamshire are considered to have a limiting long-term illness or disability under the Equality Act, which is lower than the national average of 17.7%, but which still represents a significant portion of the population.</p>
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²⁸ Transport for London (2013, April) Older Pedestrians and Road Safety, Research Debrief (<http://content.tfl.gov.uk/older-pedestrians-research-report.pdf>)

²⁹ Asher. L, Aresu. M, Falaschetti. E, Minell. J (2012) Most older pedestrians are unable to cross the road in time: a cross-sectional study (<http://ageing.oxfordjournals.org/content/41/5/690.full.pdf+html?sid=4b5142fa-92a1-4cd5-80b1-4eb35701432e>)

³⁰ Shrestha.B.P, Millonig.A, Hounsell.N.B, McDonald.M (2017) Review of Public Transport Needs of Older People in European Context (<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5656732/>)

³¹ https://www.ageuk.org.uk/globalassets/age-uk/documents/reports-and-publications/reports-and-briefings/active-communities/rb_june15_the_future_of_transport_in_an_ageing_society.pdf (page 10)

		<p>need to seek health services. Their continuing independence at home is often dependent on having available a range of transport mode and route options.</p> <p>Access to reliable transport is also closely linked to mental wellbeing and social connection for older people. Limited transport options can increase isolation and reduce opportunities to participate in community life.</p> <p>People who are disabled and/or with physical and/or mental illnesses or impairments constitute a sensitive group as they may not be able to access many forms of transport or need special arrangements and/or support to access these³². They are more likely to find it difficult to walk or travel independently and can also be disadvantaged by the cost of transport. Any changes in access, such as</p>	
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³² House of Commons Briefing Paper (2018, October) Access to transport for disabled people, Number CBP 601 (<https://researchbriefings.files.parliament.uk/documents/SN00601/SN00601.pdf>)

		<p>greater travel distances, diversions or replacement services during construction would have particular impacts on this group.</p> <p>Chronically ill persons, for example, people with impaired lung function, can be more adversely affected by air pollution³³. The same is true of hypersensitive individuals such as asthmatics³⁴.</p> <p>Noise can cause hypertension and cardio-vascular problems³⁵. Those who already have these conditions can be more troubled by noise than others.</p> <p>People with existing physical and mental illnesses, including sleep disturbance, anxiety and depression, are likely to be more sensitive to changes to their local environment.</p>	
Sensitive Group - People who are materially disadvantaged	Residential houses, community services and facilities, local	People on low incomes (living in deprived areas is a proxy	Yes – although Buckinghamshire overall has relatively low levels of

³³ DEFRA UK AIR, Air Information Resource, Effects of air pollution (<https://uk-air.defra.gov.uk/air-pollution/effects>)

³⁴ Asthma UK (<https://www.asthma.org.uk/advice/triggers/pollution/>)

³⁵ Munzel T, Schmidt FP, Steven S, Herzog J, Daiber A, Sorensen M. Environmental Noise and the Cardiovascular System. J Am Coll Cardiol. 2018;71(6):688-97 (Extract from Journal of the American College of Cardiology 2018; <http://www.intuition-physician.com/wp-content/uploads/2018/05/Environmental-Noise-and-Cardiovascular-Health.pdf>)

	<p>businesses, open space, greenspace and recreational facilities, PRow, local footpaths and cycleways, public transport, bus stops</p>	<p>measure for low income) and people without access to a car constitute a sensitive group as they are likely to walk further because they cannot afford public transport or to own a car, and their lack of transport options may limit life and work opportunities. Cost can be a significant barrier to work, education and healthcare for lower-income households. Those on low incomes may be less able to adapt to changes in access, such as greater travel distance or alternative transport provision. People living in deprived areas tend to suffer the most from road traffic incidents (deaths and injuries), noise and air pollution, as they tend to be characterised by high traffic volume, as well as other environmental burdens such as industrial facilities. This group is generally more likely to already have reduced access to health and social care as</p>	<p>deprivation as measured by the IMD compared to the country as a whole, ranking 7th least deprived out of 151 Local Authorities nationally, there are significant inequalities in levels of deprivation within the county, with pockets of deprivation in all former District Council areas. Higher levels of deprivation are concentrated in Aylesbury, High Wycombe, Burnham, Chesham, and Denham. Some more rural areas also have relatively high levels of deprivation which is likely to be influenced by barriers to housing such as affordability and geographical barriers in terms of distance to services such as GPs, supermarkets and schools. 10.1% of children aged 0 to 16 years are in absolute low-income families in Buckinghamshire³⁶.</p>
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³⁶ Buckinghamshire Council (2024) *Joint Strategic Needs Assessment: Data Profile Protected Characteristics*. Available: [Deprivation and Child Poverty | Buckinghamshire Council](#)

		<p>well as reduced access to other services and amenities.</p> <p>This group may have increased stress levels due to the factors above. In addition, this group is more sensitive to food insecurity, which has an access dimension.</p> <p>Transport-related social exclusion can be significant in rural areas, where limited public transport and longer distances to essential services further restrict opportunities and increase vulnerability.</p>	
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6.7 Population and equalities

As discussed in Chapter 2, in accordance with the Equality Act (2010) Act, EqIA considers there to be nine relevant 'protected characteristics' as follows:

- Age;
- Disability;
- Gender;
- Gender reassignment;
- Marriage and Civil Partnership;
- Pregnancy and maternity;
- Religion or belief;
- Race; and
- Sexual Orientation.

The local Government Equality Duty (as set out in the Equality Act 2010) sets out a clear expectation that each year data on the nine protected character groups is collected by local authorities and published. This data is summarised in Table 6-3 below.

Table 6-3 – Protected characteristics among the population of Buckinghamshire

Protected Characteristic	Buckinghamshire presence
Age	<p>Buckinghamshire has an even distribution of children and young adults with a smaller proportion of older adults. This is typical in a developed country and suggests a lower birth rate and a higher quality of life.</p> <p>Population aged 0 – 4 years: 5.4%</p> <p>Population aged 5 – 15 years: 19.9%</p> <p>Population aged 16 – 24 years: 8.9%</p> <p>Population aged 25 – 64 years: 43.3%</p> <p>Population aged 65 years and over: 19.1%</p>
Disability	<p>In 2021, 17.7% of the population were limited in their daily activities in England. The 2021 Census asked a question about whether day-to-day activities were limited by a long-term health problem of disability.</p> <p>A lower proportion of people living in Buckinghamshire (13.6%) say their day-to-day activities are limited a lot or a little by long term health conditions by long-term health conditions than in England as a whole (17.7%).</p>
Gender	<p>Gender-based violence in public space (e.g. street harassment) is a barrier to safe mobility and participation in public life for women and</p>

girls. In the UK, 86% of women aged 18-24 and 71% of women of all ages have experienced sexual harassment in public spaces, including public transport. The gendered division of domestic and caring responsibilities also means women make more frequent, short journeys throughout the day, whereas men make fewer but longer journeys during peak hours. However, transport systems are designed to optimise peak-hour long distance radial journeys into city centres, which reflects a male bias. To democratise the right to safe mobility, gender disparities in the transport system need to be addressed.

Based on ONS Mid-2024 Population Estimates, the Buckinghamshire ratio of males (49.1%) and females is (50.9%) is similar to the national average (males 49% and females 51%).

In Buckinghamshire, males outnumber females from ages 0 to 24 and age 26. Females outnumber males at age 25 and age 27+. This is similar to England as a whole where males outnumber females each year from 0 to 24 and females outnumber males from age 25 upwards.

Gender reassignment

Transgender status applies to people 'whose gender identity and/or expression differs from their birth sex'.

Gender Identity Research and Education Society (GIRES) is a UK wide organisation whose purpose is to improve the lives of trans and gender non-conforming people of all ages, including those who are non-binary and non-gender. They work in collaboration to empower and give a voice to trans and gender non-conforming individuals and their families. GIRES estimate 1% (650,000) of the UK population experience some degree of gender non-conformity. GIRES also charts the growth rates of those seeking medical support in relation to transitioning. This has increased by 20% per annum among young people with about 26,000 individuals seeking medical care across the UK.

In Buckinghamshire, GIRES estimate that 0.6-1% of the population may experience gender dysphoria.

Marriage and Civil Partnership

In 2021, over half of the people (52.3%) in Buckinghamshire said they were married or in a registered civil partnership. This is higher than the average for England (44.7%). The percentage of adults in Buckinghamshire that had divorced or dissolved a civil partnership was 8.4%. In Buckinghamshire in 2021 31.5% of those aged 16 and over had never been married or in civil partnership. This was lower than England (37.9%).

These figures include same-sex marriages and opposite-sex civil partnerships.

Pregnancy and maternity

Data for 2024 shows the number of live births in Buckinghamshire to be 5,616 and England as a whole it was 567,708.

In 1999, the government announced its 10-year Teenage Pregnancy Strategy for England, which aimed to reduce the conception rate for women aged under 18 years. This was followed by the release of the Teenage pregnancy prevention framework guidance in 2018, which aims

to prevent unplanned pregnancy and promote healthy relationships among young people in England. Between January and June 2022, the number of conceptions for women aged under 18 years was 6,854, an increase from 5,948 between January and June 2021 (this however may have been in part due to uncharacteristically low numbers of conceptions reported in 2020 and 2021 due to disruption in birth registrations because of COVID-19).

In Buckinghamshire, between January and June 2022, the number of conceptions for women aged under 18 years was 36.

Young mothers can often lack access to key sources of information such as antenatal classes and peer support programmes, friends with children, family and other support networks which enable breastfeeding. In Buckinghamshire, between 2023 and 2024, it was recorded that 59.2% of infants due a 6 – 8 week review were totally or partially breastfed, higher than the average for England (52.7%).

Religion or belief	<p>In 2021, for the first time in a census of England and Wales, less than half of the population (46.2%, 27.5 million people) described themselves as ‘Christian’, a 13.1% decrease from 59.1% (33.3 million) in 2011; despite this decrease ‘Christian’ remained the most common response to the religion question. There were increases in the number of people who described themselves as ‘Muslim’ (3.9 million, 6.5%) and ‘Hindu’ (1.0 million, 1.7%).</p> <p>In 2021, 34.2% of Buckinghamshire residents reported having ‘No religion’. In England in 2021 36.7% of the population described themselves as having no religion, slightly higher than Buckinghamshire. In 2021, 47.2% of people in Buckinghamshire described themselves as Christian, 7.0% as Muslim and 6.0% did not state their religion.</p>
Race	<p>In 2021, 12.4% of Buckinghamshire residents identified their ethnic group within the ‘Asian, Asian British or Asian Welsh’ category. This is higher than the English average of 9.6%. 79.9% of people in Buckinghamshire identified their ethnic group within the ‘White’ category, while 3.5% identified their ethnic group within the ‘Mixed or Multiple’ category. The proportion identifying as ‘Black, Black British, Black Welsh, Caribbean or African’ was 2.6%.</p> <p>According to the 2021 Census, the total population of England and Wales was 59.6 million, and 81.7% of the population was white.</p>
Sexual Orientation	<p>This relates to whether a person’s sexual attraction is towards their own gender, the opposite gender, or to both genders.</p> <p>The 2021 census for Buckinghamshire found that 402,282 people (90.7%) identified as straight or heterosexual and 9,684 (2.1%) identify as gay or lesbian, bisexual, pansexual, asexual, queer or other (LGB+).</p> <p>The 2021 Census for England found that 41.1 million people (89.4%) identified as straight or heterosexual and 1.5 million people (3.2%) identified with an LGB+ orientation (gay or lesbian, bisexual, pansexual, asexual, queer or other).</p>

6.8 Community Safety

Crime

The crime rate in Buckinghamshire is relatively low compared to other areas of the country. During the period of 2024/2025, the overall crime rate in Buckinghamshire was 55.3 crimes per 1,000 people³⁷. This is lower than the figure for England (86.1 per 1,000 of the population in 2024/2025).

Crime statistics for the period 1 April 2024 to 31 March 2025 are covered in table 6-4. The rate per 1,000 has been calculated based on the Buckinghamshire mid-2024 population estimate of 573,953.

Table 6-4 – Crime Rates per Type²⁰

Crime Category	Buckinghamshire number of offences	Buckinghamshire rate per 1,000	% increase /decrease from previous year
Neighbourhood crime	4,058	7.1	-17%
Residential burglary	964	1.7	-16%
Personal robbery	182	0.3	+15%
Vehicle crime	2,596	4.5	-19%
Theft from the person	316	0.6	-20%
Serious violence (non-domestic abuse)	1,984	3.5	-5%
Serious violence (knife crime)	172	0.3	-5%
Domestic abuse	4,627	8.1	-5%
Retail crime	2,981	5.2	+36%
All crime	31,751	55.3	-1.5%

Perceived Safety

Safer Buckinghamshire Partnership's Annual Report 2024/25³⁷ shows that:

- 92% of residents feel safe outside in the daylight alone, an increase from 88% in 2023.
- 57% of residents feel safe outside in the dark alone, an increase from 47% in 2023.
- 82% of residents feel safe in the town centre in the day.
- 35% of residents feel safe in the town centre in the dark.

³⁷ Safer Buckinghamshire Partnership (2025) *Annual Report 2024/25*. Available: [Safer Bucks Annual Report](#)

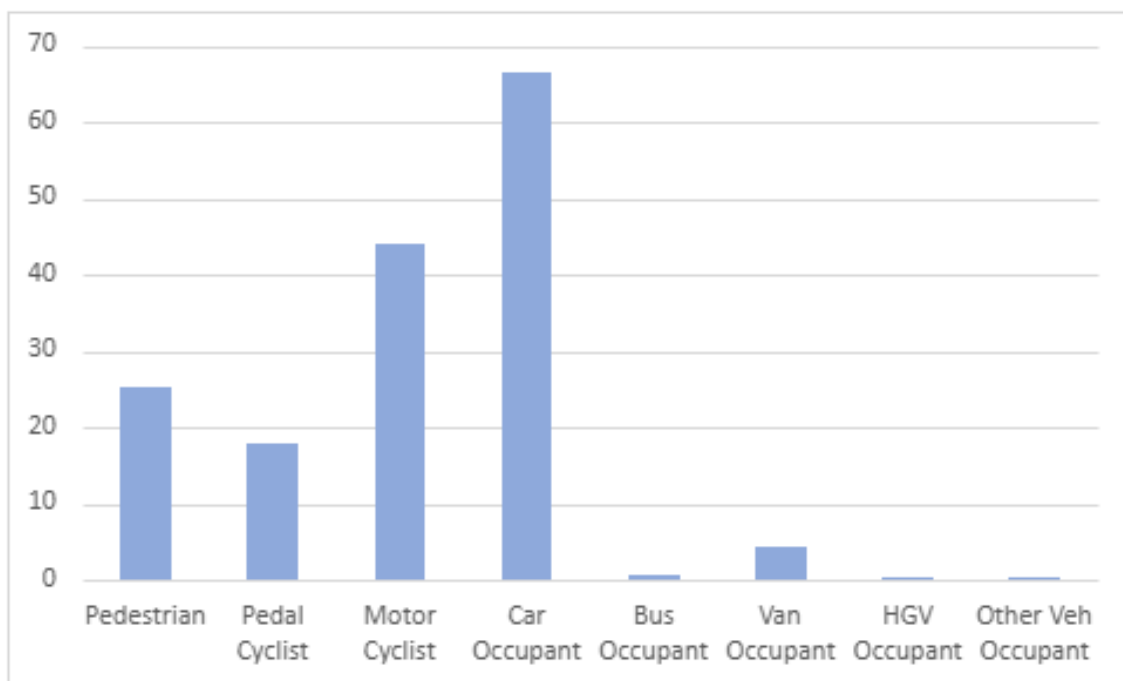
Road Safety

Road collisions are a major cause of preventable death, serious physical injury and psychological trauma. In 2023, road collisions in Great Britain caused around 133,000 casualties and killed 1,624 people³⁸. Car occupant casualties accounted for 45% of road fatalities and 55% of all road casualties in 2023, and the majority of road collisions involved at least one car. Vulnerable road users, including pedestrians, pedal cyclists, motorcyclists and e-scooter users, have higher casualty rates than other vehicle occupants³⁸.

Road safety standards have improved significantly in the past few decades, but vulnerable road users remain at a higher risk of serious injury or death than drivers. Collisions are also distributed unequally across society, with children and young adults in the most deprived areas experiencing a higher risk of injury and death than those in the least deprived areas³⁹.

Between 2020 and 2024, there were 3,226 collisions, of which 62 were fatal, in Buckinghamshire⁴⁰. In the same period, there were 985 people killed or seriously injured (KSI) during road collisions in Buckinghamshire. Annually KSIs fell during the pandemic period, however in 2023, KSIs had increased to pre-pandemic levels (181 in 2023). The 2024 KSI figure (112) is the lowest reported over the past 10 years.

Figure 6-5 – 2024 Killed or Seriously Injured in Buckinghamshire by Road User



³⁸ Department for Transport (2024) Reported road casualties Great Britain, annual report: 2023. Available: [Reported road casualties Great Britain, annual report: 2023 - GOV.UK](#)

³⁹ [How transport offers a route to better health | The Health Foundation](#)

⁴⁰ Department for Transport (2025) *Road safety statistics: data tables*. Available: [Road safety statistics: data tables - GOV.UK](#)

Figure 6-5 indicates that car occupants represented the highest proportion of KSIs (66) in Buckinghamshire in 2024, followed by motorcyclists (44), pedestrians (25), and pedal cyclists (18), while occupants of vans (4), buses (1) accounted for significantly fewer KSIs. There were no KSIs involving HGV occupants.

7. ISA Framework

7.1 Introduction

In order to follow good practice in sustainability appraisal, a number of bespoke sustainability objectives have been developed for the ISA. These ISA objectives reflect the sustainability objectives Buckinghamshire LTP5 should be aiming to achieve and the areas of sustainability that the LTP5 is expected to impact upon or have an influence on. The expectation is that even though some objectives may not be within the LTP5's direct remit, the LTP5 should be able to influence the direction of change through setting out clear policies and approaches which could inform the work of Buckinghamshire Council's partners and other stakeholders.

7.2 Assessment Framework

The establishment of appropriate objectives and guide questions is central to the appraisal process and provides a method to enable the consistent and systematic assessment of the effects of Buckinghamshire LTP5.

The ISA objectives for the LTP5 have been worded so that they reflect one single desired direction of change for the theme concerned and do not overlap with other objectives. They include both externally imposed social, environmental and economic objectives as well as others devised specifically in relation to the context of the LTP5. It should be noted that, from an assessment perspective, all ISA objectives are considered equally important to be achieved by the LTP5 and that there is no inherent prioritisation of objectives. The ultimate aim is for LTP5 to achieve net benefits across the three dimensions of sustainability (environmental, social and economic dimensions).

In order to assess how each aspect of the LTP5 performs against each of the ISA objectives, a series of decision-making criteria have been developed. The decision-making criteria are a way of guiding the assessment. They are not the only considerations to be taken into account when determining likely effects arising from the LTP5, as it is unlikely that every relevant question can be known at this stage. But they do provide a useful starting point and a transparent structure to help demonstrate how the assessment of the effects arising from the implementation of LTP5 have been undertaken. As the ISA progressed, they also helped in the development of a set of indicators to be included in the monitoring programme at a later stage of the assessment process.

An ISA Framework of 17 objectives and associated decision-making / assessment aid questions has been drawn up, developed through the analysis of baseline information and identification of key sustainability issues and opportunities, as well as the review of relevant plans, policies and legislation. In addition, decision making questions have been identified to substantiate the proposed ISA Objectives and HIA, EqIA and CSA sub-objectives.

The ISA objectives and associated Assessment Aid Questions are presented in Table 7-1. Table 7-2, Table 7-3 and Table 7-4 show proposed EqIA, HIA and CSA sub-objectives and decision-making questions, respectively. Note that the application of the Framework in relation to HIA, EqIA and CSA Sub-Objectives will be considered 'in the round' and a judgement made as to how well that aspect of the LTP5 being considered performs.

It is also to be noted that there is a certain degree of cross-over of Assessment Aid Questions within the ISA Framework i.e. the same question is asked across a number of Objectives. The rationale for this is that while the question may be the same, it is considered from a differing viewpoint and within a different context. This is the role of the Assessment Aid Questions i.e. to help consider all aspects of an Objective in arriving at an assessment of the performance.

Table 7-1 - ISA Objectives for the Buckinghamshire Local Transport Plan Refresh

No.	Topic	ISA Objective	Assessment aid questions
Environmental			
1.	Air Quality & Noise Pollution	Protect and improve air quality	Will the LTP5 Refresh: <ul style="list-style-type: none"> • Minimise emissions of particulate matter and other pollutants from transport that effect human health or biodiversity? • Improve air quality within AQMAs and avoid the need for new AQMAs? • Promote the use of low emission or zero emissions vehicles, including through promotion of associated infrastructure? • Reduce traffic growth and congestion and promote safer and more sustainable transport patterns across Buckinghamshire? • Promote walking and cycling and improve infrastructure and its safety and accessibility for these forms of travel? • Promote enhancements to green infrastructure networks to facilitate increased absorption and dissipation of nitrogen dioxide and other pollutants? • Contribute to meeting the National Air Quality Objectives or other local air quality initiatives? • Contribute to meeting relevant statutory targets in the Environment Act 2021?
2.		Reduce the impact on environmental noise from transportation sources	Will the LTP5 Refresh: <ul style="list-style-type: none"> • Preserve environmental noise quality where it is good, particularly in urban areas, both during construction and operation? • Contribute to lowering of noise levels in Noise Action Important areas? • Protect and enhance tranquillity?

3.	Climate	Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Reduce the need to travel? • Promote and enable the use of sustainable forms of transport and reduce car use? • Promote better coordination and integration of different transport modes? • Encourage greater carbon efficiency in the movement of goods and people? • Encourage use of new low or zero carbon transport technologies (EV, hydrogen)? • Encourage use of the transport estate for low carbon energy generation? • Contribute to necessary removal of residual carbon emissions from the atmosphere? • Identify opportunities to enhance carbon removal through promoting new and enhancing existing green infrastructure? • Identify initiatives aiming to reduce traffic speed in residential areas without increasing carbon dioxide emissions? • Encourage greater and more robust digital connectivity to allow increased uptake of home working, home schooling, online commerce and online health services? • Promote delivery of local services to reduce the need to travel? • Support provision of delivery consolidation centres and encourage goods delivery mode-shift? • Reduce embodied and operational carbon through the design of new
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			transport infrastructure?
4		Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Minimise the risk of flooding through design and implementation of SuDS and upstream storage Natural Flood management when possible? • Minimise the risk of flooding by avoiding areas of flood risk / flood plain when possible? • Ensure provision of appropriate compensatory measures are in place when there is no other option to land take from areas of flood plain? • Lead to development that is flood resilient over its lifetime, taking into account the effects of climate change, without increasing the flood risk elsewhere and identifying opportunities to reduce the risk overall? • Encourage design for successful adaptation (including through green and blue infrastructure) to the predicted changes in weather conditions and frequency of extreme events (freezing, heat waves, intense storms), from a changing climate?
5	Biodiversity	Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Protect and enhance nationally designated sites such as SSSIs and National Nature Reserves, including those of potential or candidate designation? • Protect and enhance valued habitat and populations of protected/scarce species on locally designated sites, including Key Wildlife Sites, Local Wildlife Sites and Local Nature Reserves? • Manage highway operational and maintenance pressures on designated sites and valued habitat and populations of protected/scarce species on locally designated sites, including Key Wildlife Sites and Local Nature Reserves? • Provide opportunities to improve / enhance and where possible connect

			<p>sites designated for nature conservation?</p> <ul style="list-style-type: none"> • Prevent development on irreplaceable habitats, such as ancient woodland and ancient and veteran trees except in exceptional circumstances and with appropriate compensation measures? • Protect and enhance Buckinghamshire’s ecological networks (the Nature Recovery Network)? • Protect and enhance priority habitats, and the habitat of priority species? • Promote new habitat creation or restoration and linkages with existing habitats? • Reduce or avoid impacts to habitats with important roles in carbon sequestration? • Increase the resilience of biodiversity to the potential effects of climate change? • Encourage sensitive or nature inclusive design? • Mandate 10% Biodiversity Net Gain for any new transport infrastructure development using latest Defra metric? • Contribute to meeting relevant statutory targets in the Environment Act? • Prevent spread of invasive species (native and non-native), including new invasive species because of climate change? • Protect areas designated as Natural Greenspace? • Protect and enhance green infrastructure and avoid severance of habitats links? • Minimise habitat fragmentation and severance of species migration and commuter routes?
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			<ul style="list-style-type: none"> Promote new habitat creation or restoration and linkages with existing habitats?
6		Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> Protect and enhance (directly or indirectly) sites of international importance (SACs, SPAs and Ramsar sites, including those of potential candidate designation) identified as part of the HRA screening process? Take on board the HRA findings and recommendations? Support continued improvements to the condition status of the UK's national site network?
7	Geodiversity	Protect, enhance and promote geodiversity	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> Protect and enhance geodiversity resource? Protect or enhance SSSIs designated for their geological interest? Support access to, interpretation and understanding of the County's designated sites of geological interest? Avoid the degradation and removal, wherever possible, of Regionally Important Geological and Geomorphological Sites (RIGS)?
8	Historic Environment	Protect and enhance cultural heritage assets and their settings, and the wider historic environment	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> Affect the integrity of designated heritage assets and their settings (such as Scheduled Monuments, Listed Buildings and structures, Registered Parks and Gardens and Conservation Areas)? Affect the significance of non-designated heritage assets (e.g. locally important buildings and archaeological remains, including newly discovered heritage assets) and their settings? Lead to harm to the significance of heritage assets, for example from the generation of noise, pollutants and visual intrusion?

			<ul style="list-style-type: none"> • Maintain or improve access to heritage assets? • Promote transport schemes which tackle traffic congestion in the County's historic villages, towns and cities? • Maintain or allow opportunities to be taken to improve the interpretation, understanding and appreciation of the significance of heritage assets?
9	Landscape and Visual	Conserve and enhance the natural beauty of Buckinghamshire's protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Protect or enhance nationally and locally designated landscapes and townscapes and seascapes, plus their settings? • Conserve, protect and enhance natural environmental assets (e.g. parks and green spaces, common land, woodland / forests etc) as they contribute to landscape and townscape quality? • Support the integrity and uphold the statutory purposes of any areas designated for landscape value, including Chilterns National Landscapes, in conjunction with the provisions of any relevant Management Plan? • Promote / protect public rights of way (PRoW)? • Support measures to enhance the resilience of ecosystems at a landscape scale and also to maximise benefits including public access and enjoyment of landscapes? • Minimise noise and light pollution from construction and operational activities on residential amenity and on sensitive locations, receptors and views? • Prevent development in green field land?
10	Water	Protect and enhance the water environment	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Protect ground, surface, estuarine and coastal water quality? • Support measures to attain good environmental status / potential of both

			<p>marine and coastal/estuarine waters as determined by the WFD and MSFD?</p> <ul style="list-style-type: none"> • Safeguard the availability of water resources (surface and groundwater)? • Minimise physical alterations to water bodies? • Minimise the use of water resources / water consumption? • Protect and enhance green infrastructure contributing to improvements in the quality of surface water run-off? • Promote where possible the minimisation of the use of impermeable hard surfacing and promote the use of SuDS and upstream storage (Natural Flood Management - NFM)? • Provide opportunities to improve Green / blue infrastructure? • Promote use of SuDS in appropriate places, recognising that these may not be suitable for areas that are contaminated? • Reduce operational and accidental discharges to the water environment? • Contribute to meeting relevant statutory targets in the Environment Act 2021?
11	Soil	Protect soil resources and avoid land contamination	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Assist in facilitating the re-use of previously developed land? • Seek to remediate contaminated land? • Avoid transport-related infrastructure development upon the best and most versatile agricultural land (Grade 1 to 3a agricultural land)? • Ensure the protection of soil resources and reduce soil quality degradation during transport-related infrastructure construction activities?

			<ul style="list-style-type: none"> • Avoid the sterilization of viable mineral resources?
12	Natural Resources	Promote sustainable use of resources and natural assets	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Reduce the consumption of primary, natural resources through encouraging the use of recycled and / or secondary materials with transport-related infrastructure projects? • Encourage resource efficiency during the whole project life cycle of transport-related infrastructure projects i.e. from concept through design and operation to decommissioning? • Seek to reduce fuel use through fuel efficiency measures and a shift towards more sustainable forms of transport in the delivery of transport-related infrastructure projects; • Improve accessibility to the Buckinghamshire’s waste management infrastructure, particularly those facilities that support recycling, composting and material recovery; • Promote the use of local suppliers that use sustainably-sourced and locally produced materials with transport-related infrastructure projects? • Promote increasingly more sustainable waste management practices with transport-related infrastructure projects in line with the waste hierarchy? • Support the delivery of a network of sustainable waste management facilities and mineral infrastructure needed to deliver growth? • Promote a Circular Economy?
Economic			
13		Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Support economic activities in areas of high growth pressures? • Support economic activities in rural areas?

			<ul style="list-style-type: none"> • Support improved availability and accessibility to good quality education, training and employment opportunities, particularly in high unemployment areas? • Contribute to establishing an effective transport network that increases investment? • Reduce congestion and improve / enhance journey time reliability on the highways and rail network? • Support the development of transport solutions which integrate with digitally smart networks and promote access to these networks?
14		Support the wider coordination of land use and energy planning across Buckinghamshire	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Support the development of EV charging networks and integrate these with new developments? • Support the development of new compact, higher density mixed use development that reduces the need to travel by private car, coordinated with public transport and ‘walk, wheel or cycle’ (active travel) infrastructure and results in shortened trip distances, particularly for employment and education purposes? • Support digital integration to optimise use of energy systems and provide integrated real time transport information to inform decisions • Support housing and employment development in areas that are or will be served by rail transport or other forms of public transport? • Support the development of electric transport solutions which integrate with local virtual energy networks? • Minimise cumulative and synergistic effects resulting from the in-combination effects of transport proposals and new development areas?

Social

15		<p>Improve health and well-being for all citizens and reduce inequalities in health (HIA specific objective)</p>	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Promote health and well-being, including of vulnerable groups (children and young people; older people; disabled people and people with long term health conditions; low-income groups and communities with high levels of deprivation; minority ethnic groups; cyclists, pedestrians, commuters by public transport, drivers) and of the wider population (residents, workers, commuters, tourists and visitors)? • Minimise nuisance on communities and their facilities including air, noise and light pollution? • Provide for facilities that can promote more social interaction and a more active lifestyle and enjoyment of the countryside and coasts? • Promote initiatives that enhance safety and personal security for all, but particularly for women and girls as a group at risk? • Promote Access to Greenspace and Green Infrastructure Standards?
16		<p>Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (EqIA specific objective)</p>	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Promote greater equality of opportunity to the varying age groups of residents (such as the older population and younger travellers), disabled people, different nationalities and ethnic groups, different religious groups, low income and unemployed people, different sex and sexual orientation groups?
17		<p>Promote community safety and reduce crime and fear of crime for all citizens (CSA specific objective)</p>	<p>Will the LTP5 Refresh:</p> <ul style="list-style-type: none"> • Provide initiatives that enhance safety on the transport network (including road safety) and therefore reduce the number of collisions, particularly for vulnerable users– children, older people, disabled people, and those in deprived areas? • Promote the application of 'Secured by Design' in transport development

			<p>schemes?</p> <ul style="list-style-type: none">• Contribute to improvements of public realm and levels of natural surveillance to create a more welcoming environment for travel, physical activity, and accessing key facilities?• Support improved personal security on public transport and at its facilities to improve accessibility to key facilities?
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Table 7-2 - HIA Objectives for the Buckinghamshire Local Transport Plan Refresh

HIA Objective	HIA sub-objectives	Assessment aid questions
<p>Improve health and well-being for all and reduce health inequalities</p>	<p>Improve accessibility to health and leisure services and facilities and amenities for all</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Ensure that (new and existing) developments are accessible (particularly on foot, by cycling or public transport) to health and care services, education, employment and other essential services, particularly for the most vulnerable groups? • Promote and enable measures to help all residents to adopt healthy lifestyles (e.g. access to leisure services and facilities that improve health and wellbeing), particularly for the most vulnerable groups? • Promote accessibility (particularly on foot or by cycling or public transport) to open space and recreational activities (e.g. playing fields, sports facilities, footpaths etc), particularly for vulnerable groups? • Protect and enhance green infrastructure, a network of linked, multifunctional green spaces in and around the area’s towns, thus creating new or improved public green space? • Support publicity or awareness-raising campaigns and/or education and practical offers to promote active modes of transport or physical activity? • Provide overall accessibility improvements that improve the quality of life of users and therefore bring health benefits? • Provide specific accessibility improvements for groups who may face barriers to accessibility to avoid widening inequalities such as disabled people, older people, and women and girls travelling alone?

<p>Indirect impacts - Improve affordability of public transport</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Provide affordable transport options to ensure accessibility to vital health services, work, education, training and skills as well as social / leisure activities? • Provide affordable transport options to ensure accessibility to key facilities such as open spaces, employment locations etc • Promote use of technology to reduce transport costs for users i.e. MaaS, integrated ticketing and smart cards, whilst ensuring those without access to technology or for whom technology may present a barrier can still access services (i.e., avoiding digital exclusion)? • Provide transport services that provide appropriate and/or statutory fare structures (i.e. concessionary fares on public transport services) to ensure the most vulnerable groups in terms of health (children, older), can afford to use transport options to access healthcare and other key facilities?
<p>Improve safety of the transport network (including roads) and reduce the number of collisions and other incidents</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Provide initiatives that enhance road safety and therefore reduce the number of collisions, particularly for vulnerable users— children, older people, disabled people, and those in deprived areas? • Promote initiatives that enhance safety and personal security for all, but particularly for women and girls as a group at risk?
<p>Reduce severance</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Improve access to essential facilities such as healthcare services to reduce any existing severance issues? • Reduce the physical and perceived impact of the transport system on the local environment? (particularly for the most vulnerable

	population in terms of severance and health – including older and disabled people)
Improve connections between and within communities	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Provide opportunities to travel within and between communities? • Provide increased opportunities to improve social interactions, particularly for those at risk of transport related social exclusion, including for those in rural areas?
Protect health by reducing air, noise, odour and light pollution from transport	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Aim to minimise air, noise, odour and light pollution during construction and operation? • Promote practices, equipment and materials which reduce vibration and air, noise, odour, and light pollution to protect health and reduce the risk of harm? • Reduce transport contributions to air and noise pollution, particularly around locations where more vulnerable users may spend more time such as children, older people, and pregnant women, and around areas of deprivation? Specific locations include schools and colleges, healthcare facilities, residential and care homes, and more deprived areas. • Promote practices, equipment and materials which reduce vibration and air, noise, odour and light pollution to assist to protect health and reduce the risk of harm?
Improve access to active travel modes?	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Increase opportunities to access active travel modes such as walking, wheeling, and cycling that directly improve health outcomes? • Consider ways to increase opportunities to access active travel

	<p>modes such as walking, wheeling, and cycling for groups who may face barriers to this such as women, people living in deprived areas, older people, and people living with a disability or long-term illness.</p>
<p>Improve access to public transport</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Increase opportunities for all members of society (including those in rural areas) to access public transport options, particularly those more vulnerable or isolated members of the community, as well as those who may have difficulty using 'walk, wheel or cycle' (active travel) modes?

Table 7-3 - EqIA Objectives for the Buckinghamshire Local Transport Plan Refresh

EqIA Objective	EqIA sub-objectives	Assessment aid questions
Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society	Improve accessibility to services, facilities and amenities for all, in particular by ‘walk, wheel or cycle’ (active travel) modes	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Improve access to essential facilities, including employment, healthcare and education, particularly for those in the most deprived areas (20% most deprived nationally), older and disabled people? • Improve public realm and overall environment including green infrastructure in the most deprived areas (20% most deprived nationally)? • Improve walking, cycling and public transport measures in the most deprived areas (20% most deprived nationally)? • Provide transport services / initiatives that are accessible and affordable for all, including those with a physical or learning disability and those with limited mobility? (this includes physical access to services and provision of accessible information on transport service) • Provide transport services that are welcoming for all groups of society to increase availability of travel options? • Provide initiatives that improve perceptions of transport, and therefore increase range of travel options available? • Take due regard of requirements for travel by disabled and mobility impaired people? • Provide initiatives to encourage access to and uptake of Public Transport for those whose first language may not be English? • Provide initiatives to encourage access to and uptake of Public

	<p>Transport for those who don't have access to digital services or who may have difficulty using digital services?</p>
<p>Improve affordability of transport</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Provide transport services that are financially accessible for all, specifically those in the most income deprived areas nationally or those on limited incomes? • Provide transport services or initiatives that improve the affordability of travel options in the area, specifically the most deprived areas and vulnerable users? • Provide transport services that provide appropriate and/or statutory fare structures for vulnerable users (i.e. concessionary fares on public transport services)? • Promote use of technology to reduce transport costs for users i.e. MaaS, integrated ticketing and smart cards?
<p>Improve safety of the transport network (including roads) and reduce the number of collisions and other incidents</p>	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Ensure safe paths for walking and cycling? • Ensure initiatives aiming to reduce traffic speeds in residential areas and promote safer driving? • Promote road safety awareness for all, with particular emphasis on more vulnerable members of society such as children and young people and those with disabilities? • Reduce the total killed and seriously injured in traffic collisions, particularly for vulnerable users in terms of collisions - children, young males, older people and those from deprived areas? • Reduce the total slight casualties? • Improve the safety of vulnerable road users such as pedestrians,

	motorcyclists and cyclists?
Improve provision of public transport in rural areas or to those areas experiencing constraint in public transport provision	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Increase provision of public transport (including frequency of service and extent of routes) in areas which have been more constrained in level of provision?
Reduce severance	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Improve access to essential facilities to reduce any existing severance issues? • Improve accessibility between and within communities? • Improve access to information for all users to promote a range of travel options, including active travel ('walk, wheel or cycle'), available for all? • Reduce the physical and perceived impact of the transport system on the local environment? (particularly for the most vulnerable population in terms of severance – including older children and disabled people)
Reduce air, noise, odour and light pollution from transport	<p>Will the LTP5 Refresh...</p> <ul style="list-style-type: none"> • Improve impact of transport on the local environment to create more welcoming areas for travel? • Provide transport options that improve / do not worsen air and noise pollution levels, particularly for the most vulnerable groups • Reduce traffic levels and congestion and promote more sustainable transport patterns across the area, particularly focusing on areas with poor air quality (e.g. AQMAs)? • Promote sustainable travel to reduce the environmental impact of transport for vulnerable groups?

Table 7-4 - CSA Objectives

CSA Objective	CSA sub-objectives	Assessment aid questions
Promote community safety and reduce crime and fear of crime for all citizens	Improve safety on the transport network (including roads) and reduce the number of collisions and other incidents	Will the LTP5 Refresh... <ul style="list-style-type: none"> • Provide initiatives that enhance safety on the transport network (including road safety) and therefore reduce the number of collisions, particularly for vulnerable users– children, older people, disabled people, and those in deprived areas?
	Improve actual and perceived safety and security issues	Will the LTP5 Refresh... <ul style="list-style-type: none"> • Promote the application of 'Secured by Design' in transport development schemes? • Contribute to improvements of public realm and levels of natural surveillance to create a more welcoming environment for travel, physical activity, and accessing key facilities? • Support improved personal security on public transport and at its facilities to improve accessibility to key facilities?

8. Assessment of Reasonable Alternatives

8.1 Introduction

The Environmental Assessment of Plans and Programmes Regulations 2004 (“the SEA Regulations”) require that when an environmental report on a proposed plan or programme is prepared, it must identify, describe and evaluate the likely significant effects of implementing reasonable alternatives to the plan or programme which it assesses, as well as the likely significant effects of the plan or programme itself. The analysis of reasonable alternatives is to take into account “the objectives and the geographical scope of the plan”.

In line with the principles of good policy making and with the requirements of the SEA legislation, reasonable alternatives for implementing the aims of the LTP5 have been considered.

8.2 Defining the alternatives

As part of the development of the LTP5, three alternative scenarios were considered by Buckinghamshire Council. These scenarios were used to test the proposed policy themes of the LTP5, as well as proposed interventions. The three alternatives are as follows:

- **Alternative 1:** To continue under the present approach to planning and investment, as per LTP4 (Business as Usual)
- **Alternative 2:** Decarbonisation Fast Track
- **Alternative 3:** Implement the proposed LTP5

Alternative 1: To continue under the present approach to planning and investment, as per LTP4 (Business as Usual)

Alternative 1 represents a continuation of the current approach under LTP4. As LTP4 was adopted prior to key local documents such as the Buckinghamshire Council Corporate Plan 2020-2025⁴¹, the England’s Economic Heartland (EEH) Regional Transport Strategy⁴² and is not guided by recent national legislation, including the National Flood and Coastal Erosion Risk Management Strategy⁴³, Decarbonising Transport: A Better, Greener Britain⁴⁴, or the

⁴¹ [Corporate plan | Buckinghamshire Council](#)

⁴² [Connecting People, Transforming Journeys: Regional Transport Strategy](#)

⁴³ [National Flood and Coastal Erosion Risk Management Strategy for England - GOV.UK](#)

⁴⁴ [Decarbonising Transport – A Better, Greener Britain](#)

Department for Business, Energy & Industrial (BEIS) Net Zero Strategy⁴⁵, it is considered that the BAU would not fully reflect emerging priorities.

It is anticipated that the Business as Usual (Alternative 1) approach will continue with current transport trends in terms of:

- Continued high reliance on car travel (continued trip numbers per person and average trip lengths) – LTP4 places limited emphasis on behaviour change and demand management, while existing development patterns and the largely rural nature of the county continue to encourage car dependency.
- Limited growth in the proportion of travel by walking/cycling/micromobility – although LTP4 includes supportive policies for walking and cycling, LTP4 lacks the strategic delivery programme, investment scale and transformative infrastructure needed for significant modal shift.
- Limited growth in the proportion of travel by public transport / shared transport – although LTP4 includes supportive policies for rail, it lacks a dedicated delivery programme for significant service or infrastructure improvements.
- Steady increase in proportion of trips by EVs – LTP4 was adopted prior to the production of the Buckinghamshire Electric Vehicle Action Plan and prior to national commitments set out in the BEIS Net Zero Strategy, meaning EV uptake under BAU would continue only in line with wider national trends rather than being supported by a coordinated local delivery programme.
- Continued level of health problems in the county - Without significant shifts toward active travel, reduced car dependency or improved air quality measures, the BAU scenario would not deliver the behavioural change or environmental improvements needed to address inactivity-related conditions, poor air quality exposure or transport-related health inequalities.
- Continued construction of new infrastructure e.g. road schemes - Infrastructure delivery would continue to follow LTP4's focus on maintaining reliable journey times, reducing congestion and mitigating development impacts. This approach relies on junction upgrades and capacity enhancements, meaning new road schemes would continue where needed to support growth rather than shifting towards more sustainable alternatives.

Alternative 2: Decarbonisation Fast Track

It is anticipated that the Decarbonisation Fast Track approach (Alternative 2), compared to Business as Usual, will lead to:

⁴⁵ [Net Zero Strategy: Build Back Greener - GOV.UK](#)

- Significantly reduced reliance on car travel (significant reduction in trip numbers per person and average trip lengths) – for example, due to car disincentive schemes and parking restrictions.
- Significant increases of travel by walking/cycling/micromobility - due to a significant increase in the level of delivery for active travel measures.
- Significant increases in proportion of travel by public transport/shared transport - due to a significant increase in the level of delivery for active travel measures.
- Significant increases in proportion of trips by EVs - due to a significant increase in the level of ambition for EV measures.
- Significant reductions in traffic congestion and smoother flowing traffic – due to a significant mode shift and reduced reliance on private cars.
- Significant improvement in human health due to increased activity - due to a significant increase in the level of delivery for active travel measures.
- Potentially some new infrastructure to support the changes (e.g., cycle lanes, bus lanes, minor highway improvements).

Alternative 3: Implement the proposed LTP5

It is anticipated that implementing the LTP5 (Alternative 3), compared to Business as Usual, will lead to:

- Reduced reliance on car travel (reduction in trip numbers per person and average trip lengths) – LTP5 includes improved active travel networks, enhanced public transport services and place-shaping policies that prioritise sustainable transport modes.
- Increase of trips by walking/cycling/micromobility – due to improvements under the LTP5 Active Travel policy theme, such as developing coherent, direct, safe, comfortable and attractive walking, wheeling and cycling networks, delivering new and improved infrastructure and enhancing the public rights of way network.
- Increase of trips by public transport/shared transport – due to improvements under the LTP5 Public Transport policy theme, such as ensuring delivery of the Buckinghamshire Bus Service Improvement Plan (BSIP) vision, investing in the delivery of rail corridors and promoting the delivery of a cohesive network of mobility hubs.
- Increased proportion of travel by EV – policies under the LTP5 Motor Vehicles policy theme include supporting a transition to electric vehicles.
- A reduction in traffic congestion and smoother flowing traffic - due to a mode shift and reduced reliance on private cars.

- Improvement in human health due to increased activity - due to increase in level of delivery for active travel measures.
- Potentially some new infrastructure to support the changes (e.g., cycle lanes, bus lanes, minor highway improvements).

Comparing these alternatives also allows identification of effects in the absence of implementing LTP5.

8.3 Assessing the reasonable alternatives

‘Alternative 1: To continue under the present approach to planning and investment’, ‘Alternative 2: Decarbonisation Fast Track’ and ‘Alternative 3: Implement the proposed LTP5’ have been assessed against the ISA Framework. Note that this is a high-level comparative assessment of the three Alternatives only with the purpose of identifying a preferred alternative in sustainability terms – the detailed policy approach to LTP5 is appraised in detail using the ISA Framework set out in Chapter 10.

As such, in consideration of three Alternatives, the assessment is undertaken in comparison of anticipated likely sustainability performance relative to each other and in order to draw comparison between Alternatives on a broad level, the following scale in Table 8.1 has been used:

Table 8-1 – Assessment scale to compare alternatives

Scale	Description
Large Positive	A significantly positive outcome is anticipated
Positive	Minor positive outcome is anticipated
Neutral	This alternative is anticipated to have the same outcome
Negative	Minor adverse outcome is anticipated
Largely Negative	A significantly adverse outcome is anticipated

The assessment has been undertaken by grouping ISA Objectives that are impacted in the same way by particular proposals.

Grouped ISA Objectives: Objective 1 - Protect and improve air quality; Objective 2 - Reduce the impact on environmental noise from transportation sources; and Objective 3 - Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

Air quality has improved in the UK over the last sixty years as a result of the switch from coal to gas and electricity for heating of domestic and industrial premises, stricter controls on industrial emissions, higher standards for the composition of fuel and tighter regulations on emissions from motor vehicles. There has also been a large growth, particularly in recent years, of renewable sources of energy such as wind and solar. However, poor air quality, particularly due to emissions from motor vehicles, remains a significant issue for community health for the population as a whole but particularly for certain vulnerable or protected characteristic groups such as the elderly, children, those with existing health conditions, those who are pregnant and those living in areas of deprivation.

The main source of air pollution in Buckinghamshire is from road transportation, with nitrogen dioxide (NO₂) as the major pollutant of concern. NO₂ is often found in urban areas (with specific reasons relating to a combination of traffic, road layout, topography etc.) and frequently those that are considered more deprived. Poor air quality is also often caused in discrete locations, for example by pinch points in the road network causing congestion.

A total of nine AQMAs have been identified within Buckinghamshire all of which have been designated for Nitrogen dioxide (NO₂). Buckinghamshire Council's Air Quality Action Plan aims to reduce concentrations of air pollutants and exposure to air pollution, in line with Buckinghamshire Council's Climate Change and Air Quality Strategy. The key priorities outlined in the Air Quality Action Plan focus on promoting active and sustainable travel, embedding air quality considerations into planning and transport strategies, and reducing emissions of NO₂ and PM_{2.5}.

The most widespread sources of noise pollution and exposure in England are from various forms of transport. Local Authorities are required to create noise maps and produce Noise Action Plans, in line with the Environmental Noise Directive. Noise Important Areas identify 'hotspot' locations where the highest 1% of noise levels at residential locations can be found and therefore highlight where further investigation should be directed. There are 216 Noise Action Important Areas within Buckinghamshire, located on the local rail and road networks.

The UK Government has noted that addressing road transport emissions presents the most significant opportunity to tackle the NO₂ pollution exceedance problem. However, it is important to note that there are other elements which also need to be addressed in

addition to road vehicles, and this includes reducing emissions from other forms of transport such as rail and aviation. Under the BAU scenario, LTP4 does not reflect or work towards the BEIS Net Zero Strategy, as it predates the UK's 2021 Net Zero commitments and therefore lacks the more recent policy focus on decarbonising all transport modes.

As noted by the Department for Transport, domestic transport emissions of road transport accounted for 29% of 2023 UK greenhouse gas emissions. In Buckinghamshire, transport takes up the largest percentage of emissions at 42.5%, which is a higher proportion than in the UK as a whole.

In recent years there have also been marked improvements in vehicle efficiency and an increasing uptake of and provision for electric vehicles (EV). Buckinghamshire's Electric Vehicle Action Plan acknowledges the impact that vehicles have on emissions and aim to promote a switch to EVs by those currently making journeys by private cars and vans. As of 2021, there were over 5,000 registered EVs in Buckinghamshire and 175 publicly accessible charging points across the County. The strategy aims to increase the number of electric vehicle charging points to 1,000 spaces within the lifetime of the plan (2022-2027). While Buckinghamshire's Electric Vehicle Action Plan supports increased EV uptake, the LTP4 lacks targeted measures to support the Electric Vehicle Action Plan, meaning there would be a less coordinated approach to EV uptake.

Nevertheless, with a growth in population and vehicle numbers, a Business as Usual (Alternative 1) scenario would see an increase in frequency of congested and slow moving traffic, resulting in higher levels of vehicle emissions and potential issues with local air quality, especially when including the likely diversion of traffic due to congestion onto less appropriate roads with adjacent housing. Alternative 1 is also anticipated to result in new infrastructure such as roads, with no clear focus on approaches such as reducing the need to travel, areas with restricted access, shift to sustainable / active modes etc. There will be elements of sustainable modes and public transport in the current approach, but these may continue to have noted problems such as low uptake of active modes (e.g. 44% of journeys to and from school are by active modes in the South East compared to 47% in England) and more rural areas experiencing poor connectivity and low frequency of bus service.

Alternative 2: Decarbonisation Fast Track

Air quality is anticipated to improve significantly under Alternative 2, which has a clear focus on encouraging a modal shift away from private vehicles to more active modes and public transport due to a significantly increased level of delivery for active travel and public transport measures. Reliance on car use is expected to reduce significantly due to car disincentive schemes and parking restrictions. There is expected to be a significant increase in the proportion of trips by electric vehicles due to a significant increase in the level of ambition for EV measures. Significant reductions in traffic congestion are anticipated. These

measures are expected to lead to significantly lower NO₂ and PM emissions. Significant reductions in carbon emissions are anticipated through implementation of these interventions, supporting net zero targets. Noise levels are likely to reduce significantly due to decreased traffic volumes and a modal shift to quieter modes such as walking and cycling.

Construction activities associated with Alternative 2 may temporarily increase emissions and noise, leading to short-term negative effects on air quality, noise and carbon emissions.

It is considered that implementing Alternative 2 will have a large positive effect on improving air quality, reducing noise from transport and reducing carbon dioxide emissions from transport in comparison to continuing under the present approach.

Alternative 3: Implement the proposed LTP5

The LTP5 takes account of the BEIS Net Zero Strategy and the UK's 2021 Net Zero commitments and Buckinghamshire Council Climate Change and Air Quality Strategy . Alternative 1, on the other hand, was adopted before the Strategy was published and therefore does not incorporate these ambitions.

The LTP5 policies promote the transport sustainability hierarchy and commit to ensuring active travel and public transport are viable and attractive options for residents. Therefore, air quality is anticipated to improve moderately under Alternative 3, which is expected to result in an increase of trips by active travel and public transport and a reduced reliance on car travel. The LTP5 supports EV adoption in accordance with Buckinghamshire's Electric Vehicle Action Plan. This is expected to result in an increased proportion of trips by electric vehicles. A reduction in traffic congestion is anticipated due to measures such as highway network management and strategic road improvements. These measures are expected to lead to moderately lower NO₂ and PM emissions. Moderate reductions in carbon emissions are anticipated through implementation of these interventions, supporting net zero targets. Noise levels are likely to reduce due to decreased traffic volumes and a modal shift to quieter modes such as walking and cycling.

Construction activities associated with the LTP5 may temporarily increase emissions and noise, leading to short-term negative effects on air quality, noise and carbon emissions.

It is considered that implementing LTP5 will have a positive effect on improving air quality, reducing noise from transport and reducing carbon dioxide emissions from transport in comparison to continuing under the present approach.

This is summarised in Table 8-2.

Table 8-2 – Air quality, noise and carbon emissions objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Protect and improve air quality Reduce the impact on environmental noise from transportation sources Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050	Negative	Large Positive	Positive

Grouped ISA Objectives: Objective 4 - Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

Current indications are that the climate of Buckinghamshire and the UK as a whole is changing. This has profound implications for the transport network, with adverse effects likely from extreme weather events. Examples include the potential for extreme heat / cold to damage rail tracks or rail infrastructure such as electric lines, as well as road surfaces. In addition, extremes of temperature will likely make journeys for passengers uncomfortable or even dangerous in some circumstances. Similarly, extremely wet conditions put transport infrastructure at risk of flooding, though transport infrastructure itself can exacerbate this situation in some locales due to impermeable surfaces, changes to flood plains, changes to hydrological regimes and so on.

It is noted that at present, some communities in Buckinghamshire, such as those in the low-lying Aylesbury Vale and the chalk valleys of the Chilterns, face significant flood risk from rivers, surface water and groundwater⁴⁶. Currently, 3,357 properties are at risk from fluvial flooding, rising to 4,167 under climate change, while 18,380 properties are at risk from surface water flooding, increasing to 28,702 in the future. Chesham and High Wycombe are national Flood Risk Areas for surface water flooding, and groundwater flooding affects areas such as Amersham, Chesham and the Chalfonts. Climate change is expected to increase peak river flows by up to 47% and rainfall intensity by 25% by the 2080s, exacerbating these risks.

Buckinghamshire is intersected by two River Basin Districts, covered by the Thames River Basin District Flood Risk Management Plan and the Anglian River Basin District Flood Risk Management Plan. These flood management plans are at the river basin level, but Buckinghamshire Local Flood Risk Management Strategy has also been developed and identifies key risks in the area. All the flood risk plans introduce a series of measures / actions to be undertaken to prevent flood risk and reduce the likelihood of flooding affecting people and property in certain locations. It is also the case that there is a series of existing flood alleviation and flood protection measures across the county. The LTP4 was adopted prior to the Buckinghamshire Local Flood Risk Management Strategy and therefore does not incorporate the updated understanding of local flood risks or the more recent measures, priorities and resilience approaches set out in the Strategy.

⁴⁶ Buckinghamshire Council (2023) *Local Flood Risk Management Strategy*. Available: [Flood risk in Buckinghamshire | Buckinghamshire Council](#)

The LTP4 was also adopted prior to the production of the National Flood and Coastal Erosion Risk Management Strategy for England and therefore does not reflect the updated national direction on climate resilience, adaptation and integrated flood risk management introduced through the 2020 Strategy.

It is considered that continuing with BAU (Alternative 1) will have a negative effect on maximising adaptation and resilience of the transport network to the effects of a changing climate.

Alternative 2: Decarbonisation Fast Track

It is anticipated that implementing Alternative 2 would support adaptation and resilience by reducing car dependency and congestion, through car disincentive schemes and parking restrictions, which lowers pressure on drainage systems and surface water runoff.

Alternative 2 sets out a range of approaches to reducing the driver of climate change i.e. it has set out how carbon emissions from transport will be reduced. This includes an emphasis on more active travel, a shift to public transport and encouragement for the uptake of EVs. However, new infrastructure (e.g., cycle lanes, bus lanes, minor highway improvements) may introduce minor additional impermeable surfaces.

On balance, is considered that implementing Alternative 2 would have a positive effect on addressing the effects of a changing climate in comparison to continuing under the present approach.

Alternative 3: Implement the proposed LTP5

As with Alternative 1 and 2, it is anticipated that the LTP5 will result in additional infrastructure. This will continue to be protected from extreme weather such as flooding by existing flood plans and flood protection measures. Nevertheless, the LTP5 goes beyond Alternative 1 and 2 by more specifically recognising the need to adapt and be resilient to climate change. Clear note is made that the transport networks should be well-maintained and prepared for the effects of adverse weather resulting from climate change. Measures such as reducing embodied carbon in highway maintenance and incorporating green infrastructure in projects are anticipated to reduce flood risk. In addition, it is anticipated that LTP5 will put an increased focus on proactive maintenance, including on the drainage network, as well as repair of road surfaces. However, new infrastructure (e.g., cycle lanes, bus lanes, minor highway improvements) may introduce minor additional impermeable surfaces.

It is also the case that LTP5 sets out a range of approaches to reduce the driver of climate change i.e. it has set out how carbon emissions from transport will be reduced. This includes an emphasis on more active travel, a shift to public transport, and promoting electric and alternatively fuelled vehicles.

It is considered that implementing LTP5 will have a positive effect on maximising adaptation and resilience of the transport network to the effects of a changing climate in comparison to continuing under the present approach.

This is summarised in table 8-3.

Table 8-3 – Adaptation and resilience objective alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding	Negative	Positive	Positive

Grouped ISA Objectives: Objective 5 - Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network; Objective 6 - Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA); and Objective 7 - Protect, enhance and promote geodiversity

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

Across Buckinghamshire there are a wide range of sites designated for nature conservation, as well as valuable ecological networks. The designated sites include those designated for their importance at the very highest levels, including three SACs and 69 SSSIs. New transport interventions have the potential to impact on the sites of ecological or geological value and more generally on the network of linked multi-functional green spaces, comprising the local green infrastructure, through direct land take for infrastructure (which may contribute to fragmentation) and construction and operational disturbance (noise, vibration, light pollution, etc.) and emissions / contamination (air, water and soil), though they may also provide opportunities for enhancement. Increased accessibility to designated sites also has the potential to adversely impact on them. Other key pressures that can impact biodiversity and which have clear linkages to transport are air pollution and climate change.

Buckinghamshire's LTP4 contains limited measures directly targeting biodiversity, designated sites or geodiversity. It is the case though that existing transport schemes do provide opportunities to address some areas of concern and these would continue in the absence of the LTP5. For example, there is a requirement for schemes to have a minimum of 10% Biodiversity Net Gain. It is also the case that there is an existing set of requirements and mechanisms to protect those sites designated for nature conservation. Nevertheless, key pressures such as habitat loss, air pollution and climate change will continue.

Alternative 2: Decarbonisation Fast Track

Alternative 2 has a range of implications for biodiversity and potentially sites designated for nature conservation. There will continue to be impacts from transport infrastructure during operation but also through development. New infrastructure schemes (e.g., cycle lanes, bus lanes, minor highway improvements) have the potential to result in the loss of or disturbance to biodiversity and designated sites.

Measures in the Decarbonisation Fast Track alternative, which lead to a reduction in traffic levels, for example through car disincentive schemes and increases in the delivery of active travel and public transport measures, will minimise effects on biodiversity. This focus away from the use of private vehicles to more sustainable modes should reduce disturbance to

designated sites and habitats and reduce the potential for direct strike / roadkill. Additionally, where there are reductions in air pollution emissions this may also reduce pollution deposition on valuable habitats. It is however noted that private car use is anticipated to continue to be the most convenient first choice of travel for many, and increased connections within and beyond Buckinghamshire may increase the number of car journeys, ultimately having negative effects on biodiversity and designated sites.

It is considered that implementing Alternative 2 would result in positive and negative effects on biodiversity.

Alternative 3: Implement the proposed LTP5

Similarly to Alternative 2, implementing the proposed LTP5 will likely have a range of implications for biodiversity and potentially sites designated for nature conservation. There will continue to be impacts from transport infrastructure, both during operation but also through development. New infrastructure schemes (e.g., cycle lanes, bus lanes, minor highway improvements) have the potential to result in the loss of or disturbance to biodiversity and designated sites.

Clear note is made in the LTP5 objectives that biodiversity on and adjacent to transport networks will be enhanced. The LTP5 includes measures that directly support biodiversity, including incorporating green infrastructure into projects and maintaining existing green infrastructure.

Measures in the LTP5 which lead to a reduction in traffic levels, for example through active travel and public transport improvements, will minimise effects on biodiversity. This focus away from the use of private vehicles to more sustainable modes should reduce disturbance to designated sites and habitats and reduce the potential for direct strike / roadkill. Additionally, where there are reductions in air pollution emissions this may also reduce pollution deposition on valuable habitats. It is however noted that private car use is anticipated to continue to be the most convenient first choice of travel for many, and increased connections through strategic road improvements within Buckinghamshire may increase the number of car journeys, ultimately having negative effects on biodiversity and designated sites.

It is considered that implementing LTP5 would result in positive and negative effects on biodiversity.

This is summarised in table 8-4.

Table 8-4 – Habitats, conservation and geodiversity objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
<p>Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network</p> <p>Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)</p> <p>Protect, enhance and promote geodiversity</p>	<p>Negative</p>	<p>Positive / Negative</p>	<p>Positive / Negative</p>

Grouped ISA Objectives: Objective 8 - Protect and enhance cultural heritage assets and their settings, and the wider historic environment; and Objective 9 - Conserve and enhance the natural beauty of Buckinghamshire's protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

Buckinghamshire has a wide range of heritage assets that are of international importance. As with across the United Kingdom, there is an ongoing risk of uncoordinated and piecemeal development resulting in successive erosion of the quantum and integrity of the county's cultural heritage resource. While these assets (and their settings) could be affected by transport interventions, in the absence of LTP5 protection will continue to be provided to these cultural heritage features (for example through protection afforded to Scheduled Monuments) and it is likely that new sites will join the list, for example through archaeological discovery, or new interpretations of existing sites. In relation to landscapes, there are several of national importance in the county and a large number of conservation areas covering a range of building characters and reflecting a diverse array of architectural styles. Many of the county's most exceptional landscape and townscapes benefit from protection through designations that will persist in the absence of the LTP5, such as the designation of Chilterns National Landscape. In general terms, modern design / landscaping principles and interested parties' expectations are promoting a renewed focus on the quality of scheme design and this trend is likely to continue, though risks from increased urbanisation and infrastructure development remain.

Buckinghamshire's LTP4 lacks measures directly targeting cultural heritage, landscapes and townscapes. As the LTP4 predates the governments Decarbonising Transport: A Better Greener Britain and other recent strategies, it does not incorporate more recent policy expectations that new transport development should conserve, and where possible enhance, the natural, built and historic environment.

Alternative 2: Decarbonisation Fast Track

As with continuing under the present approach, new development promoted or enabled through Alternative 2 could have implications for heritage assets and the wider historic environment, as well as landscapes etc. Particular effects would be dependent upon the location of the development and could be beneficial or adverse.

Measures within the Decarbonisation Fast Track alternative to reduce congestion and provide for greater sustainable modes will provide a range of opportunities to improve townscapes, the general landscape and the setting of heritage assets. It is however noted

that where connections are improved and the number of journeys increase and new infrastructure such as rail or road schemes are introduced there will be potential loss of or disturbance to heritage assets and landscape.

It is considered that implementing Alternative 2 would have both positive and negative effect on the protection and enhancement of heritage assets and the wider historic environment, as well as landscapes, townscapes and visual amenity.

Alternative 3: Implement the proposed LTP5

As with continuing Alternatives 1 and 2, new development promoted or enabled through the LTP5 could have implications for heritage assets and the wider historic environment, as well as landscapes etc. Particular effects would be dependent upon the location of the development and could be beneficial or adverse. However, the LTP5 contains aspects that are anticipated to help minimise effects. For example, commitment is made to protect the historic environment throughout the design and development of schemes.

Several LTP5 measures help protect cultural heritage and landscape character by embedding design principles and green infrastructure into transport planning. Policies promote the Healthy Streets approach and alignment with the emerging Buckinghamshire Design Code and Local Plan, ensuring streets and public spaces respect local character. Measures such as incorporation of green infrastructure in highway projects and supporting delivery of Buckinghamshire Greenway and Aylesbury Gardenway may help to preserve and enhance landscape quality.

In addition, measures within LTP5 to reduce the amount of congestion and provide for greater sustainable modes, as well as a focus on place-shaping will provide a range of opportunities to improve townscapes, the general landscape and the setting of heritage assets. It is however noted that where connections are improved and the number of journeys increase and new infrastructure such as rail or road schemes are introduced there will be potential loss of or disturbance to heritage assets and landscape.

It is considered that implementing the LTP5 will have both positive and negative effect on the protection and enhancement of heritage assets and the wider historic environment, as well as landscapes, townscapes and visual amenity.

This is summarised in Table 8.5.

Table 8-5 – Historic environment and landscape objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Protect and enhance cultural heritage assets	Negative	Positive / Negative	Positive / Negative

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
<p>and their settings, and the wider historic environment</p> <p>Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity</p>			

Grouped ISA Objectives: Objective 10 - Protect and enhance the water environment; and Objective 11 - Protect soil resources and avoid land contamination

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

There are significant challenges to maintaining a healthy water environment in the UK at present due to a range of issues such as discharges to water courses from the water supply or agricultural sectors. Transport is also recognised across the UK as being a key source of water pollution, for example through accidental spillage, as well as contaminated road runoff and this would be anticipated to continue in the absence of LTP5. Similarly, pollution through accidental spillage or construction works can impact on soil resources, leading to contamination. Soil and agricultural resources can also be lost due to infrastructure development, including that related to the transport network.

Buckinghamshire's LTP4 lacks measures directly targeting the water environment and soil resources. As the LTP4 predates the governments Enabling a Natural Capital Approach Guidance, it does not reflect the more recent expectation for transport planning to apply a natural capital approach, ensuring that new infrastructure protects water and soil quality.

Alternative 2: Decarbonisation Fast Track

As with continuing under the present approach, new infrastructure development promoted or enabled through Alternative 2 could have implications for the water environment, as well as soil and agricultural resources.

However, there are a number of measures within the Decarbonisation Fast Track alternative that can help address these issues and minimise adverse effects. For example, it is anticipated that reliance on car travel will be significantly reduced due to car disincentive schemes and parking restrictions, and improvements to active travel and public transport options. This should reduce the risk of pollution incidents through collisions and will reduce road and other runoff containing residue of tyre and brake wear.

On the whole, it is considered that implementing Alternative 2 would have both positive and negative effects on the protection of the water environment and soil and agricultural resources.

Alternative 3: Implement the proposed LTP5

As with Alternatives 1 and 2, new infrastructure development promoted or enabled through LTP5 could have implications for the water environment, as well as soil and agricultural resources.

However, there are a number of measures within LTP5 that can help address these issues and minimise adverse effects. For example, it is anticipated that reliance on car travel will be reduced due to improvements to active travel and public transport options. This should reduce the risk of pollution incidents through collisions and will reduce road and other runoff containing residue of tyre and brake wear. Incorporation of green infrastructure into projects is expected to improve water quality.

The focus in LTP5 on place-shaping will also provide opportunities to generate / redevelop some areas. This will also provide opportunities to remediate contaminated land. There are still though some effects from LTP5 though that could lead to a loss of agricultural land.

On the whole, it is considered that implementing LTP5 will have both positive and negative effects on the protection of the water environment and soil and agricultural resources.

This is summarised in Table 8.6.

Table 8-6 – Water and soil objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Protect and enhance the water environment	Negative	Positive / Negative	Positive / Negative
Protect soil resources and avoid land contamination	Negative		

Grouped ISA Objectives: Objective 12 - Promote sustainable use of resources and natural assets

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

The transport sector can impact on and interact with a wide range of resources such as through energy (fuel) use, use of construction materials (aggregate, concrete, etc.), waste generation and disposal, etc.

Construction of new transport interventions contributes to increase the levels of waste generated if building materials are not efficiently used / reused. With more waste being produced, trip kilometres to transport such waste is likely to increase, thus generating more traffic.

Transport is the largest energy consuming sector in the UK, representing 42% of final energy consumption in 2023. However, in the absence of LTP5 it is anticipated new approaches are helping to shift towards greater efficiencies in resource use and adherence to the waste hierarchy. Energy usage within transport is falling and there will be an increase in the uptake of EVs (particularly as the EV charging network expands) which will contribute to falls in the use of hydrocarbons.

Buckinghamshire's LTP4 provides limited focus on the sustainable use of resources and natural assets. As it predates the governments Enabling a Natural Capital Approach Guidance, it does not reflect the more recent expectation that transport planning should adopt a natural capital approach, ensuring that infrastructure is designed to use resources efficiently and contribute positively to the protection and enhancement of natural assets.

Alternative 2: Decarbonisation Fast Track

It is anticipated that Alternative 2 will lead to a reduced reliance on conventional car travel and a shift towards more sustainable modes, including active travel, electric vehicles and public transport. This should lead to a reduce in the use of natural resources such as hydrocarbons. However, it is noted that the potential development of new infrastructure, such as cycle lanes, bus lanes and minor highway improvements, would require use of resources.

As such, it is considered that implementing Alternative 2 would result in both positive and negative effects on the sustainable use of resources and natural assets.

Alternative 3: Implement the proposed LTP5

It is anticipated that LTP5 will promote the sustainable use of resources and natural assets by prioritising active travel and public transport (reducing use of natural resources such as

hydrocarbons), incorporating green infrastructure in highway projects, and aligning transport planning with the emerging Local Plan and Buckinghamshire Design Code. An increased proportion of travel by electric vehicle is also anticipated through the LTP5. Environmental sustainability appraisals and measures to reduce embodied carbon in construction further support resource efficiency and protection of natural assets.

However, it is noted that where connections are improved within Buckinghamshire through strategic road improvements and journeys by private car increase, the use of natural resources may increase. Additionally, it is noted that the potential development of new infrastructure, such as cycle lanes, bus lanes and minor highway improvements, would require use of resources.

As such, it is considered that implementing LTP5 would result in both positive and negative effects on the sustainable use of resources and natural assets.

This is summarised in Table 8.7.

Table 8-7 – Natural resources objective alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Promote sustainable use of resources and natural assets	Negative	Positive / Negative	Positive / Negative

Grouped ISA Objectives: Objective 13 - Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all; and Objective 14 - Support the wider coordination of land use and energy planning across Buckinghamshire

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

As of 2021, Buckinghamshire supported approximately 288,000 jobs. By 2023, its GDP reached around £21.4 billion, making it the largest local authority economy in the South East. The County's GDP per head stood at £37,698, lower than the national average of £40,382. Buckinghamshire's Gross Value Added (GVA) per hour worked in 2023 was £40.20, lower than the national average of £42.40. Buckinghamshire's GVA has been increasing since 2016.

Buckinghamshire has one of the least self-contained labour markets in England, with significant commuter flows both into and out of the county prior to the COVID-19 pandemic. The rise of home working has since reduced travel to workplaces both within and out of Buckinghamshire. The service sector provides 85% of jobs in Buckinghamshire. Health is the largest employer, followed by education, retail, and wholesale, where local job numbers are double the national average, especially in pharmaceuticals, machinery, and software. Several other sectors also outperform national employment levels.

Some of the most significant challenges facing Buckinghamshire reflect those seen in rural areas across the country, including an ageing population, limited access to key services, and ongoing pressures to meet housing demand. There are also areas of deprivation within Buckinghamshire. Higher levels of deprivation are concentrated in Aylesbury, High Wycombe, Burnham, Chesham, and Denham.

While LTP4 contains a policy to stimulate economic growth and references partnerships including the Buckinghamshire Thames Valley Local Economic Partnership (LEP) and England's Economic Heartland (EEH) Alliance, it does so in the context of the economic priorities in place at the time of its adoption in 2016. Since then, both the LEP and England's Economic Heartland have updated their strategies and economic frameworks, meaning the BAU approach does not reflect the current economic growth and productivity agenda shaping transport investment. For instance, EEH published its Transport Strategy in 2021, setting out updated priorities for productivity, connectivity, innovation and decarbonisation.

Alternative 2: Decarbonisation Fast Track

Alternative 2 is likely to have a positive effect on economic growth by improving access to jobs and training through enhanced active travel, public transport, which lead to benefits for the economy. Reduced congestion can also benefit businesses and productivity. Alternative

2 may support the wider coordination of land use and energy planning through emphasis on EV, active travel and public transport infrastructure, supporting transport decarbonisation. It is also anticipated that the Decarbonisation Fast Track alternative could support Buckinghamshire's visitor economy by providing sustainable transport options between major destinations.

It is considered that implementing Alternative 2 would have a positive effect on economic growth and job creation and supporting the wider coordination of land use and energy planning in comparison to continuing under the present approach.

Alternative 3: Implement the proposed LTP5

The LTP5 takes account of the EEH Transport Strategy, including its commitment to supporting the regional economy by connecting people and businesses to markets and opportunities, and the Buckinghamshire Economic Growth Plan. Alternative 1, on the other hand, was adopted before the EEH Transport Strategy and Buckinghamshire Economic Growth Pla were published and therefore does not incorporate these ambitions.

The LTP5 has a clear focus on supporting the economic development of Buckinghamshire, in line with the LTP5 objective 'Connecting our economy'. The LTP5 sets out how it intends to enhance the productivity of local businesses, the ability to attract investment and access to opportunities for all residents by fast, efficient, and reliable transport connections. Alternative 3 may support the wider coordination of land use and energy planning through emphasis on EV, active travel and public transport infrastructure, supporting transport decarbonisation.

Improved accessibility to public transport modes along with new infrastructure improving connectivity across Buckinghamshire will improve access to jobs and training and lead to benefits for the economy. Management of the highway network and strategic road improvements can improve efficiency and reduce journey times, which will also help to facilitate economic benefits.

Other measures include improving the health and wellbeing of residents through place-shaping, addressing road safety to reduce the burden of health services and providing accessible public transport and active travel options. It is also anticipated that the LTP will support its growing visitor economy by providing sustainable transport options between major destinations. Embracing transport innovation can support economic growth and freight and logistics measures can help to ensure freight movement is appropriate and efficient to support local business.

It is considered that implementing LTP5 will have a large positive effect on economic growth and job creation and supporting the wider coordination of land use and energy planning in comparison to continuing under the present approach.

This is summarised in Table 8.8.

Table 8-8 – Economic growth and land use and energy planning objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all Support the wider coordination of land use and energy planning across Buckinghamshire	Neutral / Positive	Positive	Large Positive

Grouped ISA Objectives: Objective 15 - Improve health and well-being for all citizens and reduce inequalities in health (HIA specific objective); Objective 16 - Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (EqIA specific objective); and Objective 17 - Promote community safety and reduce crime and fear of crime for all citizens (CSA specific objective)

Alternative 1: To continue under the present approach to planning and investment, as per LTP54 (Business as Usual)

Buckinghamshire has a population approximately 573,953 people, with some notable urban centres including High Wycombe, Aylesbury, and Amersham, though also a highly rural population scattered across the county. Buckinghamshire has a higher percentage of people aged over 65 than the national average (19.1%, compared to 18.6% in England as a whole). Life expectancy and the number of years lived in good health for Buckinghamshire residents were higher for both males and females than for England. Buckinghamshire also performs better than the national average on other health parameters including under 75 mortality rate from cardiovascular diseases, the rate of adult smokers and the proportion of people with a long-term illness or disability.

Pockets of worse health outcomes are often linked to deprivation. Transport can also play a significant role in poorer health outcomes, due to issues such as air pollution (linked to respiratory illness, asthma and premature death) and noise (linked to mental wellbeing issues), though it also provides opportunity for active travel and of course provides links to services and facilities such as health and recreation. Buckinghamshire overall has relatively low levels of deprivation as measured by the IMD compared to the country as a whole, ranking 7th least deprived out of 151 Local Authorities nationally. Higher levels of deprivation are concentrated in Aylesbury, High Wycombe, Burnham, Chesham, and Denham.

As well as health outcomes, the specific nature of the county are also reflected in issues relating to equalities and rural connectivity. For example, the rural nature of much of the county means that many people in Buckinghamshire have to rely on their cars, and presents challenges around connectivity by other modes, which can also lead to social isolation. Access to the services and facilities that people need is also an issue for large parts of the county.

The crime rate in Buckinghamshire is relatively low compared to other areas of the country, at 55.3 crimes per 1,000 people, compared to 86.1 per 1,000 people in England.

Regarding road safety, Buckinghamshire has made progress in reducing casualties on its road network in recent years, but it is considered that there is more to do. Road safety,

speeding, and anti-social driving remain key concerns for residents. Between 2020 and 2024, there were 3,226 collisions, of which 62 were fatal, in Buckinghamshire. In 2024 alone, there were 8 fatal collisions, placing Buckinghamshire as the local authority with the seventh-highest number of fatal collisions in the South East. Without continued intervention through LTP5, these trends would likely persist, but opportunities for further reductions could be missed.

Under a BAU scenario, these trends would continue to be shaped by existing LTP4 policies and other national and regional strategies. LTP4 provides some foundations for promoting active travel, improving accessibility, supporting public transport and managing road safety. However, it predates major policy developments that now influence health, equality and safety outcomes, including the 10 Year Health Plan for England, the UK Clean Air Strategy, the Inclusive Transport Strategy, the National Bus Strategy, updated Highway Code protections for vulnerable road users, and the EEH Transport Strategy. These newer strategies place stronger emphasis on health improvement, decarbonisation, accessibility, behaviour change and creating safer, inclusive places. As LTP4 does not embed these more recent commitments, the BAU scenario may fall behind the current expectations for reducing health inequalities, improving accessibility for all users and delivering safer, healthier and more inclusive communities.

Alternative 2: Decarbonisation Fast Track

Indirect beneficial effects can also be anticipated through elements of Alternative 2, such as reductions in traffic congestion and encouraging the use of sustainable modes of travel, which will improve air quality in local areas. Improved air quality will improve health outcomes across all sectors of society, with likelihood of being particularly beneficial to vulnerable groups such as children and adolescents, as well as the elderly, those with existing health conditions (particularly those related to lung and heart conditions), as well as those on low income (who tend to live in areas more heavily impacted by road traffic).

In addition to significantly increased proportions of trips by EVs and public transport, a large element in reducing emissions will be through a significant increase in walking/cycling/micromobility due to increased delivery of active travel measures. This will provide opportunities to improve health and wellbeing through exercise and leisure. Well-being will be further boosted by alleviating the adverse impacts of transport on local communities, providing a cleaner, quieter local environment with improved quality of life. This will make communities more attractive places for residents to live, work, play and socialise.

It is recognised that for many disabled individuals or those with long-term health conditions, private vehicles are not simply a convenience, but a necessity. Measures such as car disincentive schemes and parking restrictions, as per those included in LTP5, could therefore

disproportionately affect individuals with mobility challenges or those without viable transport alternatives.

By promoting active travel and public transport, Alternative 2 is likely to enhance community safety by reducing traffic volumes and associated collision risks. Additionally, inclusive transport options can help reduce social isolation, which is often linked to vulnerability and crime. It is considered that implementing Alternative 2 would have a positive effect on equality of opportunity for all, improving health and wellbeing and reducing inequalities in health outcomes, as well as promoting community safety and reducing crime and fear of crime, in comparison to continuing under the present approach.

Alternative 3: Implement the proposed LTP5

The LTP5 takes account of the Public Health England Strategy 2020-2025, Levelling up the United Kingdom, EEH Transport Strategy and Buckinghamshire Council Corporate Plan 2020-2025. These documents include ambitions to increase prosperity, protect the vulnerable and improve quality of life, amongst others. Alternative 1, on the other hand, was adopted before these documents were published and therefore does not incorporate the relevant ambitions.

LTP5 notes a range of policies and measures that seek to address many of the health, equalities and community safety issues that affect Buckinghamshire. The LTP5 objective 'Creating high quality places' aims to ensure that streets, neighbourhoods, and rights of way are designed to put the needs of people first, and to be safe and accessible for all. Incorporating the Healthy Streets approach in transport planning is expected to help to create fairer, sustainable and attractive urban spaces.

LTP5 is expected to have a positive impact on health and well-being by promoting active travel and public transport, which can increase physical activity and reduce air pollution. These changes contribute to improved physical and mental health outcomes for the population. Furthermore, by enhancing access to sustainable transport options, LTP5 can help address health inequalities, particularly for disadvantaged groups who may currently face barriers to accessing healthcare, employment, and essential services. Construction activities associated with the LTP5 may temporarily increase emissions and noise, leading to short-term negative effects on health and wellbeing.

The plan supports inclusive and accessible transport networks, which are essential for ensuring equal opportunities across communities. Improved connectivity to jobs, education, and services can reduce social and economic disparities, particularly in rural and deprived areas. However, while innovative transport technologies offer convenience, they may risk excluding individuals without access to technology or affordable internet and older people that may not feel confident using the technology.

LTP5 includes measures to directly improve the safety of transport networks such as adopting a Safe System approach to road safety and incorporating considerations about personal safety and security into decisions. Additionally, highway network management, enhanced public transport environments, and infrastructure upgrades can reduce road traffic collisions and improve personal security for all users. Increased active travel and public transport use can also foster natural surveillance, helping to reduce fear of crime.

It is considered that implementing LTP5 will have a large positive effect on equality of opportunity for all, improving health and wellbeing and reducing inequalities in health outcomes, as well as promoting community safety and reducing crime and fear of crime, in comparison to continuing under the present approach.

This is summarised in Table 8.9.

Table 8-9 – Health, equality and community safety objectives alternatives assessment

ISA Objective	Alternative 1 – Continue under present approach	Alternative 2 – Decarbonisation Fast Track	Alternative 3 – Implement LTP5
Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all	Neutral / Positive	Positive / Negative	Large Positive
Support the wider coordination of land use and energy planning across Buckinghamshire			

8.4 Conclusions to consideration of reasonable alternatives

In comparison to continuing under the present approach to planning and investment, Alternatives 2 and 3 provide stronger alignment with the ISA objectives as they incorporate more recent policy developments and strategic priorities that are not reflected in the BAU alternative. While Alternative 2 is likely to perform better in terms of environmental factors including air quality, noise and carbon emissions, Alternative 3 offers a more balanced approach when considering the wider sustainability framework, including economic, equality and social considerations. Furthermore, Alternative 2 may present significant financial and practical challenges that could hinder implementation within the plan period. From a financial perspective, transport funding is limited and there is limited flexibility in where funds can be allocated. Additionally, due to the rural nature of Buckinghamshire, particularly in the north of the county, it would be extremely challenging to significantly reduce reliance on car travel without a significant change in travel options / associated funding. Alternative 3, by contrast, provides a more pragmatic solution that aligns with the context of Buckinghamshire and addresses its specific challenges.

9. Compatibility between LTP5 Objectives and ISA Objectives

9.1 Introduction

To help ensure that the draft vision and objectives of LTP5 are as closely aligned with the Integrated Sustainability Appraisal (ISA) objectives as possible, a test of their compatibility has been undertaken. This test helps to identify potential synergies and inconsistencies, as well as assisting in refining the elements of the LTP5 and identifying alternatives.

The draft vision and objectives of the LTP5 that have been subject to this Compatibility Assessment are outlined as follows:

Draft Vision

By 2045 it will be easier for our residents to travel to work, school or college, to shop, use public services, or visit friends or leisure destinations.

For journeys in our towns, people will feel able to choose to walk, wheel, cycle or use public transport as these will be attractive, reliable and affordable alternatives to taking the car for local journeys.

In our villages and between our towns walking, wheeling, cycling or using public transport will be better and safer than it is now, but we will support those who need and want to travel by car to do so by tackling congestion, reducing delays and improving road safety.

By improving people's travel choices and helping our residents make the shift to electric and alternatively fuelled vehicles, we will have reduced our transport emissions, reduced noise and air pollution from traffic, and created healthy and thriving neighbourhoods.

Draft Objectives

1. **Connecting our economy**

The productivity of local businesses; ability to attract investment; and access to opportunities for all residents are enhanced by fast, efficient, and reliable transport connections.

- a. Reduced delays and unreliable journey times caused by congestion and roadworks.
- b. Viable active travel and public transport options to local economic and employment centres, key services, schools and leisure facilities.
- c. Faster and easier journeys to London, the Midlands and within the South-East.

- d. The transport networks are well-maintained and prepared for the effects of adverse weather resulting from climate change.
- e. Minimise negative impacts of freight movement on local communities and ensure it is appropriate and efficient to support local business.

2. *Reducing transport emissions*

Transport emissions in Buckinghamshire (excluding motorways) are within our 2025-2050 carbon budget and are on track to reach net zero by 2050.

- a. Digital connections and access to more local services reduce the need for travel.
- b. Walking, cycling, and wheeling are safe, viable options for shorter local journeys, especially those in urban areas.
- c. Travel by public transport is a viable and attractive option for residents, including to new housing and employment sites.
- d. Use of low and ultra-low emission vehicles is affordable and convenient.
- e. Sustainable travel options are integral to new developments.

3. *Creating high quality places*

Streets, neighbourhoods, and rights of way are designed to put the needs of people first, and to be safe and accessible for all.

- a. Traffic is encouraged to use the most appropriate routes.
- b. Traffic noise and air quality impacts on communities are minimised.
- c. Neighbourhoods and local centres are walking, wheeling and cycling-friendly, putting the needs of vulnerable road users first.
- d. Street design is high quality, inclusive and meets the needs of all users of the space.
- e. Biodiversity on and adjacent to transport networks is enhanced.
- f. There is improved road safety for pedestrians, cyclists, equestrians, motorcyclists and drivers.

- g. We are working towards a Rights of Way network which supports the needs of all users, including mobility and visually impaired users.

All of the above elements have been tested for Compatibility with the following ISA Objectives:

1. Protect and improve air quality
2. Reduce the impact on environmental noise from transportation sources
3. Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050
4. Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding
5. Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network
6. Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)
7. Protect, enhance and promote geodiversity
8. Protect and enhance cultural heritage assets and their settings, and the wider historic environment
9. Conserve and enhance the natural beauty of Buckinghamshire's protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity
10. Protect and enhance the water environment
11. Protect soil resources and avoid land contamination
12. Promote sustainable use of resources and natural assets
13. Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all

14. Support the wider coordination of land use and energy planning across Buckinghamshire
15. Improve health and well-being for all citizens and reduce inequalities in health (*HIA specific objective*)
16. Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (*EqIA specific objective*)
17. Promote community safety and reduce crime and fear of crime for all citizens (*CSA specific objective*)

9.2 Compatibility Assessment findings

In this compatibility assessment, the following scoring scheme is used to summarise compatibility:

Table 9-1 – Compatibility Assessment scoring scheme

√	Broadly Compatible
X	Potential Conflict
?	No sufficient detail provided to ascertain compatibility
NR	Not Relevant / No Relationship

The results of the assessment are summarised in the following table, and a discussion of the results then follows. Full assessment tables are provided in Appendix A to this Technical Note.

The results of the assessment are summarised in Table 9-2, and a discussion of the results then follows. Full assessment tables are provided in Appendix F.

Table 9-2 – Compatibility Assessment overview

Elements of LTP5 subject to Compatibility Assessment		ISA Objectives																
		Environmental											Economic		Social		Community Safety	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
		Protect and improve air quality	Reduce the impact on environmental noise from transportation sources	Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050	Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding	Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network	Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)	Protect, enhance and promote geodiversity	Protect and enhance cultural heritage assets and their settings, and the wider historic environment	Conserve and enhance the natural beauty of Buckinghamshire's protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity	Protect and enhance the water environment	Protect soil resources and avoid land contamination	Promote sustainable use of resources and natural assets	Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all	Support the wider coordination of land use and energy planning across Buckinghamshire	Improve health and well-being for all citizens and reduce inequalities in health (HIA specific objective)	Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (EqIA specific objective)	Promote community safety and reduce crime and fear of crime for all citizens (CSA specific objective)
Draft Vision		√	√	√	?	?	?	?	?	?	?	?	√	?	√	√	√	
1	Connecting our economy	√	√	√	√	?	?	?	?	?	?	?	√	?	?	√	?	
2	Reducing transport emissions	√	√	√	?	√	√	?	?	?	?	√	√	√	√	√	√	
3	Creating high quality places	√	√	√	?	?	?	?	?	√	?	?	√	√	√	√	√	

Overall, the results of the assessment indicate that there is a good degree of compatibility in a number of key elements.

Draft Vision

Clear note is made within the vision to reducing emissions, noise and air pollution from traffic. Therefore, the vision is considered to be broadly compatible with ISA objectives 1 – 3. Uncertainty has been identified in respect of ISA objectives 4 -12 as the overall effects are unclear, although reduced air pollution, increased attractiveness of active and public transport, and a shift to electric and alternatively fuelled vehicles may contribute to protecting the natural and built environment.

In respect of the economic, social and community safety objectives, the vision is also broadly compatible with ISA objectives 13 and 15 – 17 due to the emphasis on making it easier for residents to travel to work, school or college, to shop and leisure destinations, as well as creating healthy and thriving neighbourhoods and ensuring people feel able to choose to walk, wheel, cycle or use public transport. Uncertainty has been identified in respect of ISA objective 14. While it is anticipated that meeting the vision will require better coordination and planning, it is not specifically noted within the vision and as such will be dependent upon implementation measures.

LTP5 Objective 1: Connecting our economy

This LTP5 objective is broadly compatible with ISA objectives 1 – 4, 13 and 16. Clear note is made of reduced congestion, viable active travel and public transport options, and improved efficiency of transport connections, which would help to reduce carbon emissions and noise and air pollution from transport. It is noted that the transport networks will be well-maintained and prepared for the effects of adverse weather resulting from climate change. The LTP5 objective aligns with ISA objective 13 by supporting the economy and ISA objective 16 by enhancing access to opportunities for all residents.

Uncertainty has been identified in respect of ISA objectives 5 – 12 as the overall effects are unclear, although reduced congestion, viable active and public transport options and well-maintained transport networks may contribute to protecting the natural and built environment. Uncertainty also applies to ISA objectives 14. While it is anticipated that meeting the vision will require better coordination and planning, it is not specifically noted within the vision and as such will be dependent upon implementation measures.

Uncertainty has been identified for ISA objective 15 due to unclear effects for health and well-being, although reduced congestion, minimising negative impacts on local communities and improved access to opportunities may result in positive effects on health and well-being of citizens. Uncertainty also applies to ISA objective 17 as while improvements to the transport network would likely improve safety e.g. through reduced congestion, no note is made and there is a potential for adverse effects depending upon implementation.

LTP5 Objective 2: Reducing transport emissions

This LTP5 objective is expected to contribute to reducing air pollution, noise and carbon emissions from transport (ISA objectives 1 – 3) through measures such as improvements to active travel, public transport and low emission vehicle options. Broad compatibility is identified for ISA objectives 5 and 6, as the objective includes a commitment to enhancing biodiversity on and adjacent to transport networks, and ISA objective 12 as digital connections, viable active travel and public transport options and improved low and ultra-low emission vehicle options align with promoting sustainable use of resources and reducing fossil fuel use.

Uncertainty has been identified in respect of ISA objectives 4 and 7 – 11 due to unclear effects, although reduced transport emissions may contribute to protecting the natural and built environment.

Improved digital connectivity and safe, accessible active and public transport options are expected to enhance access to jobs and skills, support land use coordination, improve health and wellbeing, promote equality, and strengthen community safety (ISA objectives 12 – 17).

LTP5 Objective 3: Creating high quality places

Clear note is made to ensuring traffic noise and air quality impacts on communities are minimised, aligning with ISA objectives 1 and 2. Active and sustainable travel options would likely help to lower carbon emissions (ISA objective 3). The LTP5 objective is also broadly compatible with ISA objective 9, as high quality, inclusive street-design and active travel-friendly neighbourhoods and local centres are likely to enhance Buckinghamshire's townscapes, and ISA objective 12 as note is made to designing new developments around sustainable travel options.

Uncertainty has been identified in respect of ISA objectives 4 – 8, 10 and 11 due to unclear effects, although reduced air quality impacts and sustainable travel may contribute to protecting the natural and built environment.

Broad compatibility has been identified for all economic, social and community safety objectives (ISA objectives 13 – 17). Inclusive design and sustainable travel improvements, including accessible streets and rights of way, are expected to enhance access to jobs and skills, support land use coordination, improve health and wellbeing, promote equality for all users, and create safer public spaces.

No areas of potential conflict have been identified in any of the examined elements of LTP5, though it should be noted that the nature of LTP5 may result in development of transport infrastructure. This type of development will have clear implications for the spatial and environmental context in which it takes place and LTP5 needs to clarify how potential impacts can be addressed, across the full range of sustainability (economy, environment and society).

The assessment found that there were a number of areas with a degree of uncertainty as to the compatibility of the elements of the LTP5 and the ISA Objectives, as shown in table 9-3.

Table 9-3 – Identified potential areas of uncertainty

LTP5 Element	ISA objectives for which compatibility is dependent upon further development of LTP5 content
Draft Vision	<p>ISA Objective 4: Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding</p> <p>ISA Objective 5: Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network</p> <p>ISA Objective 6: Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)</p> <p>ISA Objective 7: Protect, enhance and promote geodiversity</p> <p>ISA Objective 8: Protect and enhance cultural heritage assets and their settings, and the wider historic environment</p> <p>ISA Objective 9: Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity</p> <p>ISA Objective 10: Protect and enhance the water environment</p> <p>ISA Objective 11: Protect soil resources and avoid land contamination</p> <p>ISA Objective 12: Promote sustainable use of resources and natural assets</p> <p>ISA Objective 14: Support the wider coordination of land use and energy planning across Buckinghamshire</p>
Draft Objective 1	<p>ISA Objective 5: Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network</p> <p>ISA Objective 6: Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)</p> <p>ISA Objective 7: Protect, enhance and promote geodiversity</p> <p>ISA Objective 8: Protect and enhance cultural heritage assets and their settings, and the wider historic environment</p> <p>ISA Objective 9: Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity</p> <p>ISA Objective 10: Protect and enhance the water environment</p> <p>ISA Objective 11: Protect soil resources and avoid land contamination</p>

	<p>ISA Objective 12: Promote sustainable use of resources and natural assets</p> <p>ISA Objective 14: Support the wider coordination of land use and energy planning across Buckinghamshire</p> <p>ISA Objective 15: Improve health and well-being for all citizens and reduce inequalities in health (HIA specific objective)</p> <p>ISA Objective 17: Promote community safety and reduce crime and fear of crime for all citizens (CSA specific objective)</p>
Draft Objective 2	<p>ISA Objective 4: Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding</p> <p>ISA Objective 7: Protect, enhance and promote geodiversity</p> <p>ISA Objective 8: Protect and enhance cultural heritage assets and their settings, and the wider historic environment</p> <p>ISA Objective 9: Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity</p> <p>ISA Objective 10: Protect and enhance the water environment</p> <p>ISA Objective 11: Protect soil resources and avoid land contamination</p>
Draft Objective 3	<p>ISA Objective 4: Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding</p> <p>ISA Objective 5: Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network</p> <p>ISA Objective 6: Protect and enhance sites designated for their international importance for nature conservation purposes (linked to HRA)</p> <p>ISA Objective 7: Protect, enhance and promote geodiversity</p> <p>ISA Objective 8: Protect and enhance cultural heritage assets and their settings, and the wider historic environment</p> <p>ISA Objective 10: Protect and enhance the water environment</p> <p>ISA Objective 11: Protect soil resources and avoid land contamination</p>

In many cases, the uncertainty of outcome is driven by the nature of the LTP5 itself. It is likely, and to be expected, that the nature of LTP5 and its objectives will potentially ultimately result in heavy engineering and construction, or schemes with a large footprint, along with the spatial and planning context in which these will take place. These types of activities have the potential for both negative and positive outcomes. In general, areas of uncertainty of compatibility relate for the most part to the environmental issues as follows:

- Adaptation and resilience of the transport network to a changing climate;
- Biodiversity and sites designated for nature conservation purposes;
- Geodiversity;

- Cultural heritage;
- Landscapes;
- The water environment;
- Soil resources and contaminated land;
- Sustainable use of resources and natural assets;
- The wider coordination of land use and energy planning.

Outcomes to these areas will depend upon the policy framework and approach to mitigation that the LTP5 sets for implementation and the following recommendations in table 9-4 are made to ensure more ‘complete coverage’ of ISA Objectives:

Table 9-4 – Overview and recommendations to strengthen and improve compatibility

LTP5 Element	Recommendation
Draft Vision	The vision is broadly compatible with social and economic ISA objectives and those related to reducing air, noise and carbon emissions. It provides a strong foundation for promoting health, wellbeing and inclusive mobility, which are key sustainability principles. The vision could be further strengthened by highlighting the role of the natural environment in creating healthy and thriving neighbourhoods, including green spaces, biodiversity, climate resilience and the historic environment.
Draft Objective 1	<p>This objective shows strong alignment with ISA objectives related to economic growth and accessibility. However, the objective could be broadened to include considerations for the natural environment, such as recognising the role of natural assets in supporting tourism, recreation, and quality of life. Environmental impacts are likely to be indirect, although reference is made to climate change adaptation. Further emphasis on minimising environmental impacts would enhance compatibility with environmental ISA objectives.</p> <p>While the objective is directed at economic connectivity, there are important social dimensions that could be drawn out, including reducing community severance, improving connectivity and improving access to specific key services, such as medical centres.</p>
Draft Objective 2	This objective is broadly compatible with many ISA objectives. However, its current focus is primarily on carbon emissions. It could be strengthened by explicitly addressing other environmental emissions / pollutants, including air quality, noise, water, and soil contamination.
Draft Objective 3	<p>This objective aligns well with social ISA objectives related to health, wellbeing and safety. To strengthen its compatibility, it is recommended that the objective recognises the contribution of the natural and historic environment to creating high quality places. For example, consider reference to:</p> <ul style="list-style-type: none"> • Integrating nature and greenspace into street and neighbourhood design to support physical and mental health, encourage active travel

and improve air quality.

- Enhancing the role of historic character and cultural assets to promote tourism and recreation.
- Incorporating Sustainable Urban Drainage Systems (SuDS) to reduce flood risk and enhance adaptation to climate change.

It is also recommended that the wording of part e be clarified. For example: “Enhance biodiversity and carbon sequestration by planting on and adjacent to transport networks”.

In conclusion, the results of the compatibility assessment indicate that the LTP5 draft vision and objectives provide a generally firm underpinning to help ensure that the sustainability performance of the plan can be maximised. However, some areas of potential uncertainty remain, in particular relating to the environment. However, incorporating to the developing LTP5 greater clarity on how these issues will be addressed will ensure that these elements are in alignment with the vision.

9.3 Conclusion

In conclusion, the results of the compatibility assessment indicate that the LTP5 Vision and objectives provided a generally firm underpinning to help ensure that the sustainability performance of the plan can be maximised. However, some areas of potential uncertainty remain, in particular relating to the environment. However, incorporating to the developing LTP5 greater clarity on how these issues will be addressed would ensure that these elements are in alignment with the requirement to ensure sustainability was fully incorporated to the LTP5.

10. Assessment of LTP5 policy themes

10.1 Introduction

The LTP5 sets out 31 policies which set out the principles for how the LTP5 vision and objectives for transport in Buckinghamshire will be achieved. The policies have been grouped into 9 thematic areas:

1. Active travel
2. Public transport
3. Safety
4. Place shaping
5. Highway network
6. Motor vehicles
7. Innovation
8. Freight and logistics
9. Delivery

It is the intention that application of these policy themes, will result in an integrated transport network that is efficient and easy to use, enabling people and goods to make greener journeys. Developing this network will allow Buckinghamshire to address key transport challenges, provide sustainable and reliable links between communities, services and opportunities, and support future growth and investment. LTP5 will strengthen the economy, improve health and wellbeing through active travel choices, and reduce emissions to improve air quality, helping to create thriving, connected and resilient communities.

The policy themes set the framework for the LTP5 interventions which have been considered by the ISA – see Chapter 11.

As with other elements of the LTP5, the policy themes have been assessed against the ISA Framework and its associated Objectives and decision aid questions (see Chapter 7), using the significance scale shown in Table 10-1.

Table 10-1 – Criteria for assessing significance of effect

Assessment Scale	Assessment Category	Significance of Effect
+++	Major beneficial	Significant
++	Moderate beneficial	
+	Slight beneficial	Not Significant
0	Neutral or no obvious effect	

-	Slight adverse	
--	Moderate adverse	Significant
---	Major adverse	

10.2 Assessment overview

An overview of the results of this assessment is presented in Table 10-2 below, with a discussion of the results for each focus area following. Full details of the assessment of each policy theme is provided in Appendix E.

Table 10-2 – Policy Theme Assessment Table

Theme	ISA Objective																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Active Travel	++	++	++	+	+	+	0	+	+/-	+	+	+	+	+	++	++	++
2. Public Transport	++	+	++	+	+	+	0	+	+/-	+	+	++	+	++	++	++	+
3. Safety	+	+	+	0	+	+	0	0	0	+	+	+	+	0	+	+	+++
4. Place-Shaping	++	++	++	+	+	+	0	+	+	+	+	+	++	+++	++	++	++
5. Highway Network	+	+	+	++	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	++	++	+	+	++
6. Motor Vehicles	++	++	++	0	+	+	0	+	+	+	+	++	+	++	++	++	+
7. Innovation	+	+/-	+	+	+	+	0	+	+/-	+	+	+	+	+	+	+	+/-
8. Freight and Logistics	++	++	++	+	+	+	+	+	+	+	+	+	++	+	+	+	+
9. Delivery	+	+	+	+	+	+	+	+	+	+	+	+	+	++	+	+	+

10.3 Assessment overview of 'Active Travel' policy scheme

The policy theme concerned with 'Active Travel' sets out a number of objectives as follows:

- Policy AT1 – We will seek to follow the principles of the transport sustainability hierarchy when developing transport strategies and interventions.
- Policy AT2 – Guided by our adopted Local Cycling and Walking Infrastructure Plans (LCWIP) which identify our infrastructure priorities, we will:
 - a. Develop walking, wheeling and cycling networks which are designed to be coherent, direct, safe, comfortable and attractive. Designs will be in accordance with our Buckinghamshire Design Guidance.
 - b. Engage with stakeholders to consider the needs of equestrians in the development and design of walking, wheeling and cycling schemes where appropriate.
 - c. Seek funding and necessary permissions to deliver new and improved infrastructure, including the Buckinghamshire Greenway, Aylesbury Gardenway and connections within and between settlements.
- Policy AT3 – We will maintain and enhance the public rights of way network to ensure it is accessible, safe, well signposted and in a suitable condition to support active travel, in response to the Local Plan and in accordance with the Rights of Way Improvement Plan (2020-2030).
- Policy AT4 – We will:
 - a. Continue to deliver digital and physical information, education and promotion measures to support walking, wheeling and cycling.
 - b. Work to identify and deliver new information, education and promotion measures in support of future walking, wheeling and cycling schemes.

Environmental Issues

It is considered that this policy theme will improve air quality and reduce overall vehicles emissions by improving walking, wheeling and cycling networks as well as the public rights of way network. This will encourage road users away from private cars and utilise more sustainable modes of transport (Objective 1 and Objective 3). Education and information provision additionally will help encourage and inform road users regarding a move away from private cars to modes of active travel. Enabling increased use of sustainable travel options directly supports air quality improvement with reduced reliance on cars and encouragement to switch fuels through the transport sustainability hierarchy can decrease emissions of pollutants like nitrogen oxides (NOx) and particulate matter (PM). It is anticipated that effects would be slight beneficial in the short term, increasing to moderate beneficial over the longer term as the effectiveness of measures increases.

It is considered this policy theme will encourage people to utilise modes of transport which would have a quieter footprint (Objective 2). Improving walking, wheeling and cycling networks, as well as public rights of way and using information, education and promotion to support these schemes will reduce the overall number of vehicles on the road, thereby reducing traffic noise. It is anticipated that the effects would increase over time, going from slightly beneficial in the short term to moderately beneficial over the long term as the effectiveness of the measures increase.

Mixed effects are anticipated as overall traffic volume will be reduced as a result of the policy scheme by promoting active travel modes, which will likely reduce congestion, thereby enhancing townscape and visual amenity. Additionally, such policies may reduce the need for intrusive infrastructure such as widened roads, thereby helping to protect wider landscapes. However, care is needed to ensure that new active travel routes do not have new implications for landscapes.

The HRA Stage 1 Screening identified no Likely Significant Effects (LSE) for policies AT1 and AT4 as they are unlikely to result in development. However, potential LSE were identified in relation to policies AT2 and AT3 as they contain proposals that may lead to development which may occur within proximity to a European site or cause increases in recreational disturbance. The Stage 2 'Appropriate Assessment' reported that with the mitigation proposed, the LTP5 will not adversely affect the integrity of the European Sites, alone or in combination with other plans or projects.

Health, Equalities and Community Safety

Natural England research (EIN065⁴⁷, EIN066⁴⁸) highlights strong links between access to natural environments and improved physical activity, mental wellbeing, reduced stress, and enhanced overall health. Therefore, policies that enhance active travel networks are expected to result in health and wellbeing benefits.

It is anticipated that this policy area will enhance and improve active travel schemes, with increased travel options and modes (Objective 15 and 16). Enhancing these routes can significantly improve access to local health centres, leisure facilities, and community amenities and reduce severance, especially for those without private vehicles who have reduced accessibility. Cyclists and pedestrians who already utilise active travel as a mode of transport will benefit significantly from the enhanced active travel networks.

⁴⁷ Natural England (2022) *Links between natural environments and mental health (EIN065)*. Available: [Links between natural environments and mental health - EIN065](#)

⁴⁸ Natural England (2022) *Links between natural environments and physical health (EIN066)*. Available: [Links between natural environments and physical health - EIN066](#)

Groups with reduced mobility such as older people or physically disabled people may not be able to avail of the active travel modes and therefore will not benefit as much from improved access to health and leisure services or reduced severance (Objectives 15 and 16).

The policy theme looks to develop safe walking, wheeling and cycling networks which will improve overall health and wellbeing by reducing the risk of collisions. Similarly, public rights of way will be maintained and enhanced to ensure that they are safe and in a suitable condition (Objective 15, 16 and 17). Education and training programmes including the Bikeability cycle training programme and Footsteps road safety training programme provide children with the skills and confidence to walk, wheel or cycle safely. There would also be benefits for all groups in relation to actual and perceived safety, by the reduction of crime and fear of crime.

Policies such as maintaining and enhancing public rights of way will help to ensure people remain connected to nature and the countryside as well as existing towns and villages and will result in overall improved health and wellbeing. This is also expected to be beneficial for all groups by providing better opportunities to travel within and between communities and help to improve social interactions (Objective 15 and 16).

During construction of new active travel routes pressures on air, noise, odour and light from transport would likely increase, however this is not expected to be significant, and the policy theme is aligned to predominantly expected to make better use of existing assets (Objective 15 and 16). A shift toward increased active travel journeys and away from private cars may reduce air, noise, odour and light pollution from transport. This could result in benefits from overall health and well-being, reduced respiratory and cardiovascular issues and enhanced quality of life. Benefits may be most notably experienced by young children and those with existing health conditions. This policy theme aims to make active travel a viable, attractive transport option and enable more people to choose to walk, wheel or cycle. Therefore, all groups would benefit significantly from improved access to active travel modes although, with the exception of groups with mobility issues (elderly or physically disabled people).

10.4 Assessment overview of 'Public Transport' policy scheme

The policy theme concerned with 'Public Transport' sets out a number of policies as follows:

Policy PT1 – We will:

- a. Assess and prioritise each of the proposed bus improvement schemes to ensure that we deliver the Buckinghamshire Bus Service Improvement Plan (BSIP) vision.
- b. Commit to keep our BSIP up to date to reflect changes in the transport landscape and the evolving needs of the community.
- c. Make the most of new opportunities and technologies to ensure that our bus services are accessible and a benefit for all.
- d. Work in partnership with bus operators through the Enhanced Partnership to deliver bus service improvements.

Policy PT2 – We will:

- a. Continue to collaborate with our partners and key stakeholders in the rail industry to lobby the government to invest in the delivery of the Northampton, Milton Keynes, Aylesbury, High Wycombe and Old Oak Common rail corridor and ensure Buckinghamshire's interests are represented in planning decisions and consultation processes.
- b. Continue to engage with external partner organisations in workshops and forums for ongoing rail projects like East West Rail and HS2 to ensure local issues are addressed and they create a lasting legacy for our communities.
- c. Support plans to reduce emissions from train services through efficiency improvements in diesel operation, the deployment of battery/hybrid trains, and overhead line electrification. This will include encouraging the trials of new zero emission trains in the county.
- d. Work to improve access to train stations and integrate rail with the wider transport network.

Policy PT3 – We will:

- a. Promote the delivery of a cohesive network of mobility hubs at transport interchanges and through new developments.
- b. Work with developers to deliver mobility hubs in new developments as outlined in our Mobility Hubs Guidance.

Policy PT4 – We will:

- a. Work with stakeholders and operators to deliver a safe, accessible and high-quality hackney carriage and private hire service.
- b. Regulate hackney carriage and private hires in accordance with our Hackney Carriage and Private Hire Licensing Policy.

Environmental Issues

This policy theme is expected to improve air quality and reduce carbon emissions (Objectives 1 and 3) by making public transport more attractive and reducing car dependency. Lower car use will decrease pollutants such as NOx and PM, though there will still be a requirement for private cars in certain areas. Effects are likely to be slightly beneficial in the short term, increasing to moderate beneficial over time as measures take effect. However, short-term adverse impacts on air quality (Objective 1) may occur from construction activities, including dust and emissions from construction of mobility hubs, bus upgrades, and rail projects.

It is considered this policy theme will help to encourage people to utilise modes which would have a quieter footprint (Objective 2). For example, improved bus and rail services, improved accessibility to public transport and a cohesive network of mobility hubs will encourage a shift to public transport. This can reduce dependence on private cars, thereby reducing the number of vehicles on the road and decreasing traffic noise at a local level, though it is noted that there is still a requirement for private cars, and taxis. It is considered benefits will likely be slight in the short to long term.

The theme includes policy commitments to use technologies to ensure that bus services are accessible and a benefit for all, which may include technology to help people to better plan journeys and take account of extreme weather events (anticipated to include flooding). This will enhance the transport network's resilience to climate change (Objective 4), with slight benefits anticipated in the short to long term.

A general reduction in traffic levels (encouraged by the shift to public transport) could potentially reduce disturbance to habitats and species (Objective 5), as well as designated sites (Objective 6). Effects are anticipated to be slight beneficial. The HRA Stage 1 Screening identified no LSE for policies PT1, PT3 and PT4 as they are unlikely to result in development, or development will likely be limited to discrete urbanised areas. However, potential LSE were identified in relation to policy PT2 as it contains proposals that may lead to development which may occur within proximity to a European site or cause increases in recreational disturbance. The Stage 2 'Appropriate Assessment' reported that with the mitigation proposed, the LTP5 will not adversely affect the integrity of the European Sites, alone or in-combination with other plans or projects.

Reduced traffic congestion and pollution can help preserve the integrity and setting of historic assets (Objective 8) and enhance townscapes and visual amenity (Objective 9). Effects are anticipated to be slight beneficial.

In respect of the water environment (Objective 10) and soil (Objective 11), slight benefits are anticipated as reduced traffic volume due to a shift towards public transport will reduce vehicle emissions, runoff and the risk of collisions that could result in discharge of pollutants, decreasing the risk of water pollution and soil contamination.

Reduced reliance on private vehicles can decrease the consumption of fossil fuels and other non-renewable resources (Objective 12). However, there may be short-term adverse impacts on resources during construction of mobility hubs, bus upgrades, and rail projects.

Moderate beneficial effects are anticipated for economic growth as enhanced public transport services can improve access to employment and education (Objective 13). The policies support coordinated land use and energy planning (Objective 14), aligning with the BSIP vision. Promoting public transport reduces car reliance, lowering demand for new roads and encouraging integrated land use, with slight benefits anticipated.

Health, Equalities and Community Safety

Enhanced public transport will improve health and well-being (Objective 15) by reducing social isolation, increasing access to healthcare, education, employment, and community activities, and supporting safer, more reliable travel. Vulnerable groups such as older people, disabled individuals, low-income households, and rural residents will benefit most, provided services are accessible and affordable. Improved connectivity through buses, rail, mobility hubs, and taxis will strengthen community ties, reduce transport poverty, and indirectly support active lifestyles. While construction may cause temporary environmental impacts, long-term benefits include better air quality, reduced stress, and improved quality of life for all residents. Moderate beneficial effects are anticipated in respect of health and wellbeing.

Improved public transport policies will promote greater equality of opportunity (Objective 16) by reducing transport barriers and enabling fairer access to healthcare, education, employment, and community activities for all groups. Vulnerable groups, including older people, disabled individuals, low-income households, and rural residents, will benefit most from enhanced accessibility, safer services, and improved connectivity. Inclusive design, affordability measures, and rural provision are essential to maximise benefits and reduce inequalities, ensuring that public transport becomes a viable and attractive option for all citizens. Slight beneficial effects in the short-term are expected to increase to moderate beneficial in the medium to long-term.

The public transport improvement policies will promote community safety and reduce crime and fear of crime (Objective 17) by creating a more efficient, less congested network that

lowers collision risk. Safety measures in public transport infrastructure and mobility hubs, such as improved lighting, CCTV, and secure waiting areas at bus stops, rail stations, and mobility hubs, could improve confidence and reduce fear of crime, particularly for vulnerable groups including women, older people, children, disabled individuals, minority ethnic communities, LGBTQ+ individuals, and those who are pregnant or caring for young children. Slight beneficial effects are anticipated in terms of community safety and crime.

10.5 Assessment overview of ‘Safety’ policy scheme

The policy theme concerned with ‘Safety’ sets out a number of policies as follows:

Policy S1 – We will:

- a. Adopt a Safe System approach to road safety in order to minimise death and serious injury on our local road network supplementing our obligations under Road Traffic Act 1988.
- b. Invest in effective, targeted actions ensuring that our transport system protects all users and supports wider public health and sustainability goals.
- c. Strengthen coordination across transport, planning, health, enforcement, and emergency services in the planning and delivery of safety interventions to ensure that all parts of the transport system work together to prevent death and serious injury.

Policy S2 – We will:

- a. Incorporate considerations about personal safety and security into our work and look to implement measures that improve the perceived and actual safety of Buckinghamshire’s transport network.
- b. Incorporate “Secured by Design” into our work and work with Thames Valley Police and other partners to deliver safe and inclusive environments.

Environmental Issues

This policy theme seeks to create a safer transport environment that will enable more people to feel able to choose to walk, wheel or cycle, encouraging active travel and public transport use over private cars. This shift can help reduce carbon emissions (Objective 3) and support air quality improvement (Objective 1) by reducing emissions of pollutants such as NOx and PM. Reduced vehicles on the road can decrease traffic noise at a local level (Objective 2). Slight beneficial effects are anticipated.

Enabling increased use of sustainable travel options and reduced reliance on cars can reduce disturbance, vehicle emissions and pollution, aiding biodiversity (Objective 5) and sites designated for nature conservation (Objective 6). The introduction of street lighting has the potential to adversely effect on biodiversity and designated sites, although this is not expected to be notable where limited to urban streets. Slight beneficial effects are anticipated. The HRA Stage 1 Screening identified no LSE for the Safety policy theme as none of the policies contain proposals that may lead to development.

A shift away from private car use can reduce vehicle emissions and runoff, which can positively impact water quality (Objective 10) and minimise soil disturbance (Objective 11) by reducing the risk of pollution from oil, fuel, and other contaminants. An improvement in road safety can reduce the risk of collisions that could result in discharge of pollutants. The policy theme can reduce the need for extensive road infrastructure, thereby minimising soil contamination. Slight beneficial effects are anticipated.

The policy theme aims to create a safer transport environment, encouraging active travel and public transport over private car use. This reduces demand for new infrastructure, minimises resource use and waste, and lowers reliance on fossil fuels, resulting in slight beneficial effects for sustainable resource use (Objective 12).

As this policy theme focuses on improving the safety of the transport network as well as improving personal safety and security, it is likely to improve the options people have for transport as they will feel safer using active travel or public transport. This will help to improve access to education, training and employment opportunities (Objective 13). Therefore, slight beneficial effects are anticipated.

Health, Equalities and Community Safety

The policy theme aims to improve road and personal safety, encouraging active travel and public transport use. The increased travel options will improve access to health and leisure services and facilities and amenities, reduce severance and improve connections between and within communities, particularly benefitting groups that may not have felt safe to use active travel or public transport previously, as well as low-income groups and rural residents. The policy theme aims to improve road and personal safety, reducing deaths and serious injuries. This would particularly benefit vulnerable groups such as children, older people, and those with disabilities or health conditions. A shift to sustainable modes of transport may reduce air, noise, odour and light pollution from transport, with benefits for overall health and well-being, reduced respiratory and cardiovascular issues and enhanced quality of life. However, increased street lighting, which is used to enhance safety, may have slight adverse effects on health. This policy theme will improve access to active travel modes and public transport by making it safer through measures such as street lighting, CCTV and the design of streets and neighbourhoods. Slight beneficial and adverse effects are anticipated (Objective 15).

The policy theme aims to improve road and personal safety, encouraging active travel and public transport use. This will enhance access to services, reduce severance, and benefit all groups, particularly ethnic minorities, LGBTQ+ people, disabled individuals, women, children, older people, and those with health conditions. Improved safety may also shift travel from private cars to sustainable modes, reducing air, noise, odour, and light pollution, supporting health and quality of life. Negative effects, such as increased street lighting, are not expected to be significant. Slight beneficial effects are anticipated (Objective 16).

The policy theme aims to improve transport network safety by reducing deaths and serious injuries and enhancing personal security through measures like street lighting and CCTV. These improvements will benefit all users, particularly vulnerable groups such as children, older people, those with disabilities or health conditions, and people from ethnic minority backgrounds, LGBTQ+ individuals, and women who may have felt unsafe using public transport or active travel. Large beneficial effects are anticipated (Objective 17).

10.6 Assessment overview of 'Place-shaping' policy theme

The policy theme concerned with 'Place-shaping' sets out a number of policies as follows:

Policy PS1 – We will create inclusive and accessible streets by incorporating the Healthy Streets approach into our work and putting the needs of people first in street, public space and neighbourhood design.

Policy PS2 – We will:

- a. Design and appropriately allocate public space to support the needs of all people and transport options.
- b. Work to align the LTP5 and Buckinghamshire Design Code for new developments.
- c. Support delivery of the Buckinghamshire Regeneration Framework through public space design and allocation.

Policy PS3 – We will align the LTP5 and Local Plan, adopting a vision-led approach to transport planning and embedding the LTP5 policies in spatial planning and land use decision making.

Policy PS4 – We will assess planning applications in accordance with the Highways Development Management Guidance.

Policy PS5 – We will:

- a. Promote sustainable and active travel to and from education as outlined in our Getting to School Strategy.
- b. Continue to promote initiatives outlined in the Getting to School Strategy and explore the potential for further initiatives.
- c. Ensure developers provide safe, direct and accessible walking, wheeling and cycling routes to schools within the development from first occupation, where that school is within statutory walking distance of the development (currently 2 miles for under 8 years of age and 3 miles for over 8 years of age).
- d. Work with developers to consider existing unsafe walking routes to schools, within statutory walking distance of the development, and opportunities to rectify them as part of the development.

Policy PS6 – We will:

- a. Promote sustainable and active travel to and from workplaces through travel planning and the development management process.

b. Work to build relationships and partnerships with key employers to support workplace travel planning.

Environmental Issues

The place-shaping policy aims to make active travel and public transport more accessible by creating inclusive streets, allocating public spaces for all users, and prioritising sustainable locations for new developments. It also promotes sustainable travel to education and workplaces, reducing private car use and improving air quality (Objective 1). This is expected to reduce the number of private vehicles on the road, leading to overall lower carbon emissions (Objective 3) and lower traffic noise levels (Objective 2). Effects are expected to be slightly beneficial in the short term, increasing to moderately beneficial over time as measures take effect.

A reduction in the use of private vehicles may reduce the need for new roads in the future and therefore increase resilience of the transport network to a changing climate (Objective 4). Effects would be slight beneficial in the medium to long term.

The policy theme is expected to reduce the number of private vehicles on the road, reducing disturbance, vehicle emissions and pollution, benefiting biodiversity (Objective 5) and designated sites (Objective 6). It is anticipated effects would be slight beneficial.

The HRA Stage 1 Screening identified no LSE for policies PS2, PS4, PS5 and PS6 as they are unlikely to result in development. However, potential LSE were identified in relation to policies PS1 and PS3 as they contains proposals that may lead to development which may occur within proximity to a European site or cause increases in recreational disturbance. The Stage 2 'Appropriate Assessment' reported that with the mitigation proposed, the LTP5 will not adversely affect the integrity of the European Sites, alone or in-combination with other plans or projects.

The place-shaping policy theme places emphasis on putting the needs of people first and creating high quality places for all. This may result in fewer cars in urban centres and would help to enhance the setting of heritage assets / the wider historic environment (Objective 8) and will help to enhance townscapes and visual amenity (Objective 9), resulting in slight benefits.

Additionally, a reduction in the number of vehicles on the road will reduce the risk of water pollution (Objective 10) and soil contamination (Objective 11) from oil, fuel, and other contaminants. A reduction in traffic volume can reduce the risk of collisions that could result in discharge of pollutants. It is anticipated effects would be slight beneficial.

A move away from private vehicles can reduce the demand for new infrastructure, thereby minimising resource use and waste generation (Objective 12). Enabling increased use of sustainable travel options can reduce reliance on private vehicles, which in turn can decrease the consumption of fossil fuels and other non-renewable resources. It is anticipated effects would be slight beneficial.

The school travel and workplace travel policies specifically look to promote sustainable and active travel to schools and workplaces. Promoting and improving sustainable and active travel modes can improve local connectivity and provide affordable travel options to jobs and services (Objective 13).

Health, Equalities and Community Safety

The policy theme aims to make active travel and public transport easier by creating inclusive streets, allocating public spaces for all users, and prioritising sustainable locations for new developments. This will improve access to services and reduce severance, benefiting all groups, especially children, older people, disabled individuals, and low-income households. Rural residents may benefit less as the focus is on urban areas. While affordability is not directly addressed, accessible options are emphasised. Safer streets and fewer private vehicles will reduce collisions, with significant benefits for vulnerable groups. The policy also promotes connections within communities and makes walking, cycling, and wheeling safer and more attractive, alongside prioritising bus space in urban areas. Therefore, moderate beneficial effects are anticipated for Objective 15.

The policy seeks to make active travel and public transport easier by creating inclusive streets, allocating public spaces for all users, and prioritising sustainable locations for development. This will improve access to services and reduce severance, with greater benefits for children, older people, and those with disabilities. Safer streets and fewer private vehicles will help reduce collisions, and measures to reassess and improve walking routes aim to make active travel safer. A shift to sustainable modes will also cut air, noise, odour, and light pollution, supporting health and well-being, particularly for children near schools. Therefore, moderate beneficial effects are anticipated for Objective 16.

Building high-quality places will likely include making the transport network safer by reducing private vehicles in urban centres and promoting active travel and public transport, helping to lower traffic collisions. The policy focuses on making walking, cycling, and wheeling safe by reassessing and improving unsafe routes where viable. Benefits are expected for all groups, with particular benefits for vulnerable users such as children, older people, and those with disabilities. Actual and perceived safety will improve through safe routes, particularly for children, with measures aligned to Road Safety GB standards for direct, accessible routes to schools. Therefore, moderate beneficial effects are anticipated for Objective 17.

10.7 Assessment overview of 'Highway Network' policy scheme

The policy theme concerned with 'Highway Network' set out a number of objectives as follows:

- Policy HN1 – We will maintain our highways infrastructure in accordance with our Highway Infrastructure Asset Management Policy.
- Policy HN2 – We will manage the highway network in accordance with the Traffic Management Act 2004 and as outlined in the Buckinghamshire Council Network Management Policy.
- Policy HN3 – We will:
 - a. Continually review the best model for delivering parking services, working work with members and partners to deliver against our strategic aims as set out in our parking strategy.
 - b. Ensure parking in new developments meets local needs, is high quality and supports delivery of the Local Plan and Local Transport Plan objectives.
 - c. Ensure cycle parking is provided at destinations and designed into residential developments that is fit-for-purpose, secure, well located, and caters for all cycle users and cycle designs.
- Policy HN4 – We will conduct enforcement of traffic, parking, rights of way and highway restrictions in accordance with statutory legislation and to support delivery of LTP5.
- Policy HN5 – We will provide strategic road improvements where required, ensuring minimal severance and connectivity provisions.
- Policy HN6 – We will:
 - a. Reduce embodied carbon emissions in our highways maintenance and construction operations where feasible.
 - b. Maintain our Resilient Network Plan and continue to prioritise key roads that form our resilient network.

Environmental Issues

It is anticipated that through measures reducing congestion, promoting sustainable modes of transport and incorporating green infrastructure will result in improved air quality and reduced emissions (Objective 1 and 3). Managing the highway network efficiently can reduce idling and emissions, while parking strategies and cycle infrastructure encourage more sustainable modes of transport and encourage a shift away from private car use. These measures will prevent behaviours that worsen air quality and by incorporating green infrastructure, they can improve air quality by absorbing pollutants. However, there may be adverse effects during construction due to the dust and emissions during strategic road improvements. Additionally, these schemes may only offer short term congestion relief, and they carry a risk of increasing traffic volumes over time.

Improved highway maintenance and network management can reduce noise from congestion by lessening idling (Objective 2). Parking strategies and enhanced cycle infrastructure encourage a modal shift away from cars, reducing overall traffic volumes and associated noise. Additionally, green infrastructure can provide natural noise attenuation through vegetation barriers. There may be potential short term negative effects through noise pollution during construction.

New infrastructure road projects will create new areas of hardstanding that would increase flood risk however, new road infrastructure should incorporate flood risk measures, which would reduce vulnerability to extreme weather events (Objective 4). Green infrastructure improves drainage, reduces surface runoff and provides enhanced cooling during heatwaves.

Incorporating green infrastructure into projects and maintaining existing green infrastructure projects will directly enhance biodiversity and designated sites (Objective 5 and 6). Additionally, the increase in active travel will reduce car dependency and the resulting habitat fragmentation and pollution. Reducing embodied carbon emissions may indirectly benefit biodiversity by mitigating adverse impacts of pollution on ecosystems and sites designated for nature conservation. Minimising severance can reduce habitat fragmentation. There may be short-term adverse impacts on biodiversity due to disruption including noise, light and vibration from construction required during strategic road improvements. The HRA Stage 1 Screening identified no LSE for policies HN1, HN2, HN3, HN4, HN6 and HN7 as they are unlikely to result in development. However, potential LSE were identified in relation to policy HN5 as it contains proposals that may lead to development which may occur within proximity to a European site or cause increases in recreational disturbance. The Stage 2 'Appropriate Assessment' reported that with the mitigation proposed, the LTP5 will not adversely affect the integrity of the European Sites, alone or in-combination with other plans or projects.

It is considered that this policy theme may protect and enhance geodiversity through the incorporation of green infrastructure and minimising severance, which can help protect geology. Adverse effects may occur during highway maintenance and strategic road improvements as construction activities may impact soil profiles and geodiversity sites (Objective 7). Additionally, this will protect cultural heritage assets as it will maintain their integrity and settings as well as reducing noise, pollutants and visual intrusion (Objective 8).

This policy theme will result in maintaining and enhancing natural features of the LTP5 area through incorporating green infrastructure. It can reduce the visual impact of highways and support a more resilient landscape (Objective 9). Adverse effects may occur where highway maintenance, strategic road improvements and parking provision alter landform and introduce hard infrastructure, impacting landscape and townscape character. There may be

short-term adverse impacts including light pollution from construction required during strategic road improvements.

New road infrastructure projects incorporating green infrastructure can improve natural drainage and reduce surface water runoff, with carbon reduction measures can help reduce contamination risks (Objective 10). There is potential for adverse effects where highway maintenance, strategic road improvements and parking provision increase impermeable surfaces, leading to higher runoff and potential flooding, as well as water pollution from road contaminants. Additionally, this will improve soil stability and improve infiltration (Objective 11). However, there is potential for adverse effects where highway maintenance, strategic road improvements and parking provision result in an increase in impermeable surfaces, impacting soil resources and increasing pollution risks.

Where new infrastructure is required, this will require use of resources, particularly during construction (Objective 12). Improved cycle parking may enable increased use of active travel options, reducing reliance on private vehicles, which can decrease the consumption of fossil fuels and other non-renewable resources. However, improved highway infrastructure and strategic road improvements may encourage car use, adversely impacting resource use.

It is considered that this policy theme will encourage economic growth and improve access to jobs and skills as strategic road improvement and managing the network efficiently will enhance connectivity, reduce travel times and improve access to employment and educational opportunities (Objective 13). Parking strategies and enforcement will help support local businesses by improving accessibility. Additionally, it is anticipated that this policy theme will support the wider coordination of land use planning through strategic road improvements and highway network management (Objective 14).

Health, Equalities and Community Safety

Natural England research (EIN065⁴⁹, EIN066⁵⁰) highlights strong links between access to natural environments and improved physical activity, mental wellbeing, reduced stress, and enhanced overall health. Therefore, policies that promote incorporation of green infrastructure are expected to result in health and wellbeing benefits.

This policy theme will provide better connectivity, reduced congestion and enhanced road safety. Improved access to health, leisure services, and amenities, benefiting those with private vehicles most (Objective 15). Cycle parking provision promotes active travel, supporting physical health, though older people and those with disabilities may face limitations. Enforcement measures will enhance safety and reduce collision risks, while

⁴⁹ Natural England (2022) *Links between natural environments and mental health (EIN065)*. Available: [Links between natural environments and mental health - EIN065](#)

⁵⁰ Natural England (2022) *Links between natural environments and physical health (EIN066)*. Available: [Links between natural environments and physical health - EIN066](#)

commitments to reduce carbon and incorporate green infrastructure will improve air quality. However, groups that are less likely to have access to private vehicles, such as children, older adults, people with disabilities, and low-income households, may experience fewer benefits, highlighting potential inequalities.

This policy theme benefits individuals with access to private vehicles through improved connectivity and travel times, this could disadvantage those without a private car however, such as children, older adults and low-income households (Objective 16).

The improved highway is anticipated to improve actual and perceived safety by reducing collisions and deterring dangerous or illegal behaviours (Objective 17). Parking provision and maintenance will support safer travel, benefiting all groups, with particularly significant advantages for vulnerable users such as children, older people, and those with disabilities. However, increased road capacity could encourage car use, potentially raising traffic risks.

10.8 Assessment overview of ‘Motor Vehicles’ policy theme

The policy theme concerned with ‘Motor Vehicles’ sets out a number of objectives as follows:

Policy MV1 – We will:

- a. Support our residents and the Council’s transition to Electric Vehicles in accordance with our Electric Vehicle Action Plan.
- b. Review and renew our Electric Vehicle Action Plan at the end of the plan period.

Policy MV2 – We will:

- a. Require development with a Transport Assessment or Travel Plan to deliver car clubs where possible, integrating them into the transport network as part of sustainable transport provision and as outlined in the Car Clubs Guidance.
- b. Require operators to introduce a higher proportion of zero emission vehicles in their fleets and share scheme performance data to inform future policy.
- c. Make provisions as appropriate to make the most of new car club opportunities across the county especially in high density areas, rural communities and transport hubs.

Environmental Issues

This policy theme encourages EV adoption and car sharing to cut transport emissions, reducing pollutants like NOx and PM (Objective 1) and reducing carbon emissions (Objective 3) by private car usage. The policy theme is expected to significantly reduce noise emissions from transport (Objective 2) due to less cars on the road and much quieter EVs instead of traditionally fuelled cars. Benefits are expected for air quality, noise and reducing carbon emissions to be slight in the short term, increasing to moderate over time as measures take effect. Minor short-term negative impacts on air quality may occur during EV charging infrastructure construction/implementation.

Encouraging EV use and car sharing is expected to reduce disturbance, emissions, and pollution, benefiting biodiversity (Objective 5) and sites designated for nature conservation (Objective 6). Effects are anticipated to be slightly beneficial in the short to long term. Minor short-term negative impacts may occur from EV charging infrastructure construction/implementation. The HRA Stage 1 Screening identified no LSE for the Motor Vehicles policy theme as none of the policies contain proposals that may lead to development.

Encouraging EV use and car sharing is expected to reduce congestion and pollution, helping preserve historic assets and the wider heritage environment (Objective 8). Reduced

congestion can enhance townscapes and visual amenity while limiting the need for intrusive infrastructure like new or widened roads, helping protect wider landscapes (Objective 9). Effects are anticipated to be slightly beneficial. Slight adverse effects on landscapes and townscapes (Objective 9) may occur in the short-term due to construction/implementation of new EV charging infrastructure.

Reduced vehicle emissions and runoff from oil, fuel, and other contaminants, through the use of more sustainable vehicles and reducing the number of vehicles on the road, can positively impact water quality (Objective 10). Car sharing schemes can reduce the need for extensive road infrastructure, thereby minimising soil disturbance and contamination (Objective 11). A reduction in traffic volume can reduce the risk of collisions that could result in discharge of pollutants. Slight beneficial effects are anticipated.

Encouraging EV adoption and car sharing will reduce traditional fuel use and promote sustainable transport. Fewer cars on the road may lower demand for new infrastructure, minimising resource use and waste (Objective 12). Moderate beneficial effects are anticipated. Minor short-term adverse effects may occur from resource use during EV charging infrastructure construction/implementation.

A reduction of cars on the road may help to reduce congestion and therefore improve journey times and access to jobs and skills (Objective 13). Car sharing options may also provide an option to access jobs and skills for people who are unable to afford a private car. Slight beneficial effects are anticipated.

The policy theme is anticipated to have significant beneficial effects in terms of supporting the wider coordination of land use and energy planning across Buckinghamshire as it will support the development of EV charging networks (Objective 14). Moderate beneficial effects are anticipated.

Health, Equalities and Community Safety

Car club schemes will improve transport options for those unable to afford a private car, enhancing access to services, reducing severance, and benefiting low-income and rural residents without vehicles (Objective 15). Vulnerable groups may benefit most, though children, cyclists, and pedestrians are unlikely to benefit significantly. Fewer cars may reduce collisions, though perceptions of safety and EV impacts on sensory-impaired users need consideration. The policy supports EV transition, reducing air, noise, odour, and light pollution, improving health and quality of life, especially for young children and those with health conditions. While not directly targeting active travel, car clubs at transport hubs may improve access to public transport. Moderate beneficial and slight adverse effects are anticipated.

Car club schemes will provide transport options for those unable to afford a private car, improving access to services and reducing severance, with significant benefits for low-

income and rural residents (Objective 16). Children are unlikely to benefit as they cannot use private vehicles independently. While EVs involve costs, car clubs may improve affordability over time. Fewer cars could reduce collisions, though safety concerns around sharing vehicles remain, particularly for women and minority groups. Care is needed to avoid issues for sensory-impaired users. Supporting EV transition will reduce air, noise, odour, and light pollution, improving health and quality of life, especially for young children and those with health conditions. Moderate beneficial and moderate adverse effects are anticipated.

Reducing car numbers through car club schemes may help lower collisions, benefitting all groups (Objective 17). However, safety concerns around sharing vehicles remain, particularly for women and minority groups. Care is also needed to ensure EVs do not create issues for people with sensory impairments, such as hearing loss, though this is largely outside the LTP5's scope. Slight beneficial and moderate adverse effects are anticipated.

10.9 Assessment overview of 'Innovation' policy scheme

The policy theme concerned with 'Highway Network' sets out a number of objectives as follows:

- Policy I1 – We will:
 - a. Support the research, development, and implementation of innovative and intelligent transport technologies, retaining our status as a living laboratory for innovation and demonstration.
 - b. Support drone development and work with businesses in the county to identify opportunities for testing.

Environmental Issues

It is considered that transport technologies can help reduce congestion, thereby reducing emissions and improving air quality (Objective 1 and 3). Drones provide an alternative to vans for deliveries, having the potential to further reduce congestion and emissions. Additionally, new transport technologies could be quieter, and a reduction of HGVs on the road will reduce environmental noise (Objective 2).

New innovative technologies may enable smarter network management, which may improve preparedness and response to extreme weather and flooding, bringing slight benefits for flood resilience (Objective 4).

It is considered that transport technologies can help reduce emissions and congestion, improving air quality and reducing disturbance from traffic which can indirectly aid sites designated for nature conservation (Objective 5 and 6). There is a potential risk that new infrastructure for innovation could lead to land take or habitat loss. Slight beneficial effects are anticipated, with slight adverse effects in the short-term. The HRA Stage 1 Screening identified no LSE for the Innovation policy theme as the policy is unlikely to result in development.

There is expected to be a slight benefit to cultural heritage, due to the reduction of congestion and emissions preserving the character and setting of cultural assets (Objective 8).

New efficient transport technologies can bring slight benefits to townscapes and landscapes. The policy reduces congestion and may reduce the need for new highway infrastructure, which could maintain visual amenity and protect landscape character (Objective 9). Increased uptake of EV's, through improved EV charging infrastructure, could reduce pollution deposition on buildings etc. and help improve the overall townscape. There is a potential risk of vandalism and illegal dumping associated with introducing new mobility options, such as e-scooters.

It is considered by promoting sustainable transport technologies, the policy can bring slight benefits by helping reduce vehicle emissions and runoff that could enter watercourses (Objective 10). Additionally, the reduction on private vehicles can lower the risk of soil contamination from fuel spillage and road runoff (Objective 11).

This policy theme reduces reliance on fossil fuels and improves transport efficiency, which conserves natural resources. Additionally, this policy may reduce the need for new infrastructure through innovative solutions, reducing material consumption and supports the sustainable use of natural assets (Objective 12).

The Innovation policy theme is likely to have a slight positive effect on economic growth by enhancing connectivity to employment and skills opportunity, particularly for residents with limited access to traditional transport (Objective 13). Furthermore, By promoting innovation, the policy theme supports the wider coordination of land use and energy planning (Objective 14)

Health, Equalities and Community Safety

It is anticipated through improving transport technology, there will be improved connectivity and access to health and leisure services reducing isolation and transport barriers (Objective 15 and 16). This will particularly benefit older people, children, disabled individuals, those with health problems, and low-income groups, who are less likely to own private vehicles. The policy also promotes electric vehicles and drones, reducing air and noise pollution, which supports respiratory and cardiovascular health, especially for vulnerable groups.

Groups with limited mobility or that are less likely to have access to a private vehicle will benefit most, including older people, children and people with disabilities. The technology may improve traffic management and enhance road safety for all groups. The policy reduces reliance on fossil fuels, reducing air emissions and noise pollution (Objective 16).

Implementation of transport technology may improve traffic management and enhance road safety for all groups. This may particularly benefit children, older people, people with disabilities and those with no access to a private vehicle. Potential risks such as technological malfunctions or operational errors could undermine perceived safety and raise concerns, such as issues like drone crashes and e-scooter collisions. Groups that are particularly sensitive to safety issues include older people, children, women, people with disabilities and minority ethnic groups (Objective 17).

10.10 Assessment overview of 'Freight and Logistics' policy theme

The policy theme concerned with 'Freight and Logistics' set out a number of objectives as follows:

- Policy FL1 – We will:
 - a. Support work to deliver our Freight and Logistics Strategy objectives.
 - b. Deliver freight actions and measures in accordance with our Freight and Logistics Strategy.

Environmental Issues

It is considered that the freight and logistics policy theme is anticipated to have a moderate beneficial impact on air quality through the measures outlined in the Freight and Logistics Strategy that reduce emissions from freight through increased rail freight to reduce HGVs, appropriate routing to avoid sensitive areas, and promoting the consideration of freight and logistics into decision making and land use planning (Objective 1 and 3). The Freight and Logistics Strategy include the objective 'Environment – Protect our environment and support reducing emissions from freight' which directly supports the ISA objective to reduce carbon emission from transport (Objective 3). The policy theme will also have a beneficial effect on reducing environmental noise by the reduction of HGVs within towns and villages (Objective 2).

Slight beneficial effects are anticipated for the adaption and resilience of the transport network for the LTP5 by future proofing the network, from events such as flooding and extreme weather (Objective 4). Measures to promote rail freight over HGV transport will

The policy theme is expected to help slight benefits by minimising habitat fragmentation, reducing pollution pressures on ecosystems and sites designated for nature conservation (Objective 5 and 6). The HRA Stage 1 Screening identified no LSE for the Freight and logistics policy theme as the policy is unlikely to result in development. Additionally, there is anticipated to be slight beneficial effects as measures created through the policy theme will result in avoiding damage to geologically sensitive areas and reducing erosion risks associated with heavy freight traffic (Objective 7).

The policy theme is expected to result in slight beneficial effects as measures can help avoid harm to historic sites and their settings and reduce vibration and air pollution from heavy freight traffic near sensitive heritage areas (Objective 8). Additionally, there are slight beneficial effects through this theme by support enhancement of visual amenity and the conservation of protected landscapes (Objective 9).

It is considered that this policy theme will incorporate the consideration of freight and logistics in decision-making and land use planning (Objective 14). Thereby, leading to a reduction in HGVs is expected to result in a reduction of water pollution and road runoff (Objective 10). Similarly, this will likely result in avoiding soil erosion and contamination risks associated with heavy freight traffic (Objective 11). Furthermore, the consideration of freight and logistics into decision-making and planning will likely help minimise resource consumption and protect natural assets (Objective 12).

It is anticipated that the policy will ensure efficient movement of goods and support the productivity of local businesses and attract investment, bringing a beneficial effect to the economy (Objective 13). It is anticipated that effects would be slight beneficial in the short term, increasing to moderate beneficial over the longer term as the effectiveness of measures improves.

Health, Equalities and Community Safety

It is anticipated that this freight and logistics policy theme will bring slight benefits for health and wellbeing of through reducing HGVs within towns and villages, which will result in improved street safety and lower air and noise pollution, which will protect vulnerable groups at risk to poor air pollution like children and elderly people (Objective 15). These changes also encourage active travel and enhance access to health and leisure services, bringing health benefits to vulnerable groups such as children, older people, and those with disabilities.

The policy is also expected to have a slight beneficial effect on equality of opportunity by reducing congestion in towns and villages, thereby increasing accessibility to services and amenities (Objective 16). Vulnerable groups such as children, older people, and those with disabilities benefit most from improved safety and reduced collision risk, although they may not fully utilise active travel modes. No direct measures address public transport affordability or rural access, so benefits for low-income groups and rural residents without private vehicles are limited.

The reduction of HGVs within towns and villages lowers collision risk and creates safer, less congested streets for walking, wheeling and cycling (Objective 17). These improvements slightly enhance both actual and perceived safety, particularly benefiting vulnerable groups such as children, older people, and people with disabilities, and contribute to reducing fear of collision in public spaces.

10.11 Assessment overview of 'Delivery' policy theme

The policy theme concerned with 'delivery' sets out a number of objectives as follows:

- Policy D1 – We will
 - a. Develop LTP5 supporting strategies that are aligned with and support delivery of the LTP5 vision, objectives and policies.
 - b. Conduct detailed environmental sustainability appraisals for all LTP5 supporting strategies that identify transport schemes.
- Policy D2 – We will
 - a. Deliver LTP5 through a phased programme of interventions aligned with our vision and objectives.
 - b. Oversee and review our implementation plan to ensure it remains relevant and delivers our transport vision and objectives.
 - c. Support transport schemes based on their contribution to the LTP5 vision and objectives and prioritise available funding accordingly.
 - d. Lobby, engage and work with partners to support delivery of our transport priorities.
 - e. Conduct an appropriate level of environmental and wider sustainability assessment for all measures required to implement LTP5 as they come forward.
- Policy D3 – We will:
 - a. Continue to safeguard land to support the future movement of people and services, revoking the designation only when it is no longer required or has been delivered.
 - b. Carry out regular reviews of improvement lines and communicate outcomes to relevant parties and on our website.
 - c. Implement a safeguarding criteria that ensures deliverability and mitigates the council's financial risk.
- Policy D4 – We will:
 - a. Maintain and expand our network of walking, wheeling, and cycling counters to understand usage of infrastructure, monitor active travel trends and prioritise investment.
 - b. Continue to report on transport corporate KPIs.
 - c. Conduct monitoring of LTP5.

Environmental Issues

This policy theme will slightly improve overall air quality and reduction of carbon emissions as it involves conducting environmental sustainability appraisals for supporting strategies, thereby ensuring new schemes identify and mitigate air quality impacts early. This theme also may result in increased active travel journeys through prioritising schemes that align with the LTP5 vision and objectives will help promote sustainable transport methods and reduce emissions (Objective 1 and 3). Additionally, this theme will minimally reduce the traffic volumes in noise sensitive areas. The requirement of sustainability appraisals within the policy theme may also result in improved climate adaptation and flood resilience by ensuring future schemes can integrate measures to manage flood risk and improve the overall transport network's resilience (Objective 2 and 4).

Biodiversity schemes may be integrated into new transport supporting strategies, through sustainability appraisals engaging with partners, monitoring the LTP5 and safeguarding land to support the future movement of people and services. Additionally, this could result in slight benefits for sites that are designated nature conservation sites by properly identifying and mitigating potential impacts from the LTP5 sub strategies. The HRA Stage 1 Screening identified no LSE for policies D1, D2 and D4 as they are unlikely to result in development. However, potential LSE were identified in relation to policy D3 as it contains proposals that may lead to development which may occur within proximity to a European site or cause increases in recreational disturbance. The Stage 2 'Appropriate Assessment' reported that with the mitigation proposed, the LTP5 will not adversely affect the integrity of the European Sites, alone or in-combination with other plans or projects.

This is similar for potential impacts on geodiversity, landscape character and visual amenity. There may be indirect benefits for the water environment as the potential impacts are identified and mitigated during the environmental sustainability appraisals for supporting strategies, engaging with partners, monitoring the LTP5 and safeguarding land to support the future movement of people and services.

Through sustainability appraisals for the LTP5 supporting strategies engaging with partners, monitoring the LTP5 and safeguarding land to support the future movement of people and services, indirect benefits for cultural heritage sites as they can be identified and negative impacts on these sites are mitigated.

It is considered that this policy scheme may have a slight benefit on sustainable use of resources as it outlines a number of supporting strategies, including on the topic 'asset management'. Monitoring of the LTP5 may ensure sustainable use of resources. Additionally, environmental sustainability appraisals may also encourage efficient land use and resource management.

The development of supporting transport strategies and an implementation plan could bring slight benefit by enabling targeted investment in transport corridors and town strategies, improving connectivity between employment areas and residential communities. Safeguarding land for future schemes ensures that long-term infrastructure needs are met, reducing constraints on economic development.

It is considered that this policy theme supports the wider coordination of land use and energy planning by aligning implementation plans and supporting strategies with LTP5 objectives, safeguarding land for future schemes and engaging with partners (Objective 14). This is anticipated to be moderately beneficial in the medium to long term as the plans and strategies become established.

Health, Equalities and Community Safety

The Delivery policy theme does not directly target health and well-being (Objective 15), however measures such as safeguarding land for future transport improvements, updating town and corridor strategies, and aligning supporting strategies with LTP5 objectives may improve access to services, enable investment in active travel infrastructure and promote safer routes.

The policy theme also does not directly target equality measures (Objective 16), however by developing supporting strategies, safeguarding land for future schemes, and monitoring the LTP5, it may enable interventions that improve access to services, active travel options and public transport connectivity. These measures can help reduce transport-related inequality, particularly for groups with limited mobility or no access to private vehicles.

The Delivery policy theme does not directly target safety or crime (Objective 17), however, by safeguarding land for future transport improvements, developing town and corridor strategies, and aligning supporting strategies with LTP5 objectives, it may enable interventions to improve safety in the long-term. Monitoring the LTP5 can help to identify unsafe areas and inform targeted safety improvements.

10.12 Overview of policy theme assessment findings

The ISA examined each of the following LTP5 policy themes in turn:

1. Active Travel
2. Public Transport
3. Safety
4. Place-shaping
5. Highway Network
6. Motor Vehicles
7. Innovation
8. Freight and logistics
9. Delivery

There are 31 policies grouped under the nine policy themes. The policies set out the principles which will guide how the vision and objectives for transport in Buckinghamshire will be delivered and set the framework for the LTP5 interventions. A consistent theme across Buckinghamshire's LTP5 policy themes is the ambition to support a substantial shift towards more sustainable travel, with policies designed to encourage increased use of public transport, walking, wheeling and cycling. Alongside this, the policies place strong emphasis on ensuring that the transport network operates efficiently. While the focus is on sustainable modes and increased transport efficiency, the LTP5 does recognise that this may not be suitable for all and as such, there are elements of the LTP5 which still provide mechanisms for more efficient use of private vehicles.

The ISA found that the LTP5 performs strongly in a number of areas in sustainability terms. Of particular note are the areas of addressing air pollution, noise and reducing carbon emissions. Overall, it is considered that the LTP5, through encouraging a shift to more sustainable and active transport modes, will be beneficial in respect of reducing air pollution and carbon emissions. It is also likely that noise, associated with the transport network will reduce through reduced volumes of traffic and congestion, as well as increased uptake of EVs.

The LTP5 also performs strongly in terms of the sustainable use of resources and natural assets. A shift to public transport and active travel is expected to reduce reliance on private vehicles, which can decrease the consumption of fossil fuels and other non-renewable resources and reduce the need for new infrastructure.

The LTP5 is also considered to be particularly beneficial in terms of economic growth and access to jobs, with policies that promote sustainable and active travel to workplaces and schools, strengthen connectivity, and support efficient movement of goods.

It is anticipated that the LTP5 will support the wider coordination of land use and energy planning across Buckinghamshire through alignment with current local plans such as Buckinghamshire BSIP, and measures including strategic road improvements, highway network management and supporting the development of EV charging networks.

In relation to health, equalities and community safety, it is anticipated that the LTP5 will also bring significant benefits. Health and wellbeing will be improved as the LTP5 promotes more active and sustainable travel, reduces exposure to air pollution and noise, and creates safer, more accessible environments for all users.

It is anticipated that the improvements will have a beneficial effect on equality of opportunity by reducing transport-related inequality and providing more inclusive, accessible and affordable travel options for all. However, it is also the case that there are aspects of the LTP5 which not all groups may be able to take full advantage of. For example, an emphasis on active travel may not work well for the elderly, those with certain health conditions, those with young children and so on. The distances in rural areas may mean that active travel routes would be more likely to be used for recreation, rather than the full connectivity they can bring. Similarly, an emphasis on innovative transport technologies may not work well for all groups due to cost, access to technology etc. The LTP5 recognises these challenges. For example, provision is still made for improving the network for the use of private vehicles – the elderly, or those in rural areas may still need to rely on this mode for some journeys.

Community safety is likely to be improved through measures to create safer streets, reduce traffic-related risks and enhance the overall quality of public spaces.

It is inherent in the nature of the LTP5 that it will result in a series of transport infrastructure interventions, which in some cases may require heavy civil engineering works across large areas, though it is recognised that for the most part this will be in limited areas to address specific issues such as congestion hotspots or providing connections to new developments. Nevertheless, it is in the nature of these works that there will be environmental implications. For example, new infrastructure such as roads (or road widening and junction improvements), as well as mobility hubs and parking could involve a direct loss of habitat, or soils. There could also be an adverse effect on the water environment through pollution incidents during construction, or through polluted runoff during operation, and would also result in a new feature in the landscape. Increased disturbance could have adverse effects, for example, in terms of noise or the setting of heritage assets. Nevertheless, overall, it is considered that the LTP5 will bring a range of beneficial effects to the environment and people of Buckinghamshire.

Where it was considered that performance could be improved, a series of recommendations were made to strengthen the policy wording in order to address those areas identified as

adverse or to accentuate those areas of the LTP5 which have been identified as being beneficial to sustainability. These recommendations resulted in amendments to the LTP5 which provide greater clarity on how sustainability would be considered during design, construction, maintenance and operation of any intervention / scheme. In particular, the recommendations informed revisions to the 'Delivery' policy theme, ensuring that the final version of LTP5 more clearly embeds environmental protection, community wellbeing and resilience considerations into the implementation process, thereby improving its overall sustainability performance.

Buckinghamshire Council have committed to working with partner organisations, including engagement with the statutory bodies of Environment Agency, Natural England and Historic England; undertaking Environmental Impact Assessment, Habitats Regulation Assessment, Health Impact Assessment and Equalities Impact Assessment, as well as the development of Construction Environmental Management Plans. There are also a series of more specific actions to increase resilience in the transport network and address specific environmental, health or equality related issues.

In conclusion therefore, notwithstanding that the nature of LTP5 will result in some adverse sustainability effects that will require mitigation, it is considered that the policy themes provide a robust base for an overall good sustainability performance.

11. Assessment of Interventions

Introduction

In order to deliver the vision and objectives of the Buckinghamshire LTP5, a series of 'Interventions' have been set out by Buckinghamshire Council to guide future work, bidding and funding. As such, at this stage, the Interventions proposed are 'high level' only and are linked to the policy areas set out within the Core Strategy. It is acknowledged that further work is required to further define the Interventions and it is noted that there is a requirement for strong partnerships with communities, local businesses, neighbouring authorities and government bodies to deliver the Interventions proposed. The Interventions proposed are consistent with the following broad types:

- Active travel
- Public Transport
- Safety
- Place shaping
- Highway Network
- Motor vehicles
- Innovation
- Freight
- Delivery

For the most part, such Interventions are likely to have a mix of effects on the environment, local communities and visitors to Buckinghamshire. In relation to both 'Freight' and 'Delivery', the Intervention Plan notes a series of supporting Strategies and Plans, with no definitive Interventions identified at this point. As such, no further consideration is made of these broad types here.

For the remaining intervention types, typical effects, and how these could be addressed is set out as follows.

Active travel

Within this broad Intervention type, schemes are anticipated to relate to the further development / improvement of the walking, wheeling and cycling network. This would include new or upgraded routes, as well as general 'Rights of Way' improvements, improved wayfinding and the delivery of information, education and promotion in support of schemes.

Many elements of such schemes are anticipated to have little to no effect on the environment. For example, improved wayfinding would involve new signage, which although a new feature in the landscape / townscape, would not lead to significant effect, while delivery of information and education would not involve any physical infrastructure. Nevertheless, there could be opportunities for beneficial effects in relation to people, with such factors making using the active travel network easier for people. Consideration should be given to making sure that such signage and other information / education is provided in a way that the maximum number of people can benefit. As such issues relating to sensory loss e.g. sight and language used should be considered.

Further developing the active travel network may require development of new routes and this would entail the use of materials and resources. There may also be adverse implications for landscape and other environmental issues such as the water environment as well as biodiversity and soils through the construction of new linear routes, particularly if these are new routes across greenfield sites.

Nevertheless, an increase in active travel / traffic free routes, or enhancement to existing routes, would likely lead to a reduction of motor vehicle use, due to the improved accessibility and walkability created, which will lead to a reduced dependency on private car use. It is anticipated that this would lead to an improvement of air quality in the immediate local area and reduce overall carbon emissions. Improvements in overall air quality would be anticipated to be generally beneficial (perhaps significantly) to the overall health of vulnerable groups such as children and the elderly. The reduction of car use would also provide greater opportunity to improve the health of the wider population as the provision of active travel / traffic free routes would generally promote an increase in physical activity such as walking, running and cycling.

Such routes, will give opportunities for regeneration of derelict or unused sites and areas, improving overall public realm and townscape. By creating this new infrastructure, it could help give these areas a new 'sense of place' and make the area more appealing for users of the routes. There may also be opportunities to improve overall biodiversity, as cleaning up of derelict and unused sites may provide opportunities for planting native species, further improving the quality of public realm and streetscape. Removal of traffic may enhance and improve the settings of existing scheduled monuments, listed buildings and conservation areas within urban centres.

As a result of no traffic on these routes, overall safety will be improved as the reduction in traffic will lead to a reduced risk of road traffic collisions, further improving overall health and safety to vulnerable groups and the wider population – children and the elderly would likely benefit most. Sensitive lighting and other security features should be provided to help ensure a sense of safety within the route, as well as to protect the safety of vulnerable groups that may use the traffic free routes, for example elderly and lone travellers.

Public Transport

Improvements to public transport are anticipated to include support to and development of the bus network, as well as improvements to the rail network. New mobility hubs would be developed and hackney carriage / private hire vehicles made safer, cleaner (in terms of emissions) and overall more attractive. It is anticipated that such measures will help to ensure that this mode of travel is more attractive and accessible to users.

As such, it is anticipated that there will be a reduction in air and carbon emissions, with beneficial effects on those vulnerable groups such as young children and those with certain health conditions. Overall reduction in traffic due to an increase in public transport usage could also result in reductions in noise and make the townscape quieter and more appealing, with potential benefits for the setting of the historic environment. It would also be anticipated that the water environment could benefit through reduced pollutants in runoff.

As well as likely overall environmental benefits, an enhanced public transport offering would also be expected to improve health and wellbeing by reducing social isolation, increasing access to healthcare, education, employment, and community activities, and supporting safer, more reliable travel. Vulnerable groups such as older people, disabled individuals, low-income households, and rural residents will benefit most, provided services are accessible and affordable. Improved connectivity through buses, rail, mobility hubs, and taxis will strengthen community ties, reduce transport poverty, and indirectly support active lifestyles. It is to be noted that inclusive design, affordability measures, and rural provision would be essential to maximise benefits and reduce inequalities, ensuring that public transport becomes a viable and attractive option for all citizens.

It is also the case that construction or upgrading of features such as mobility hubs could also lead to temporary construction impacts on both the environment and people, though it is anticipated such issues could be satisfactorily addressed during the design and planning stage and with the enactment of good working practices details in a Construction Environmental Management Plan.

Safety

It is anticipated that schemes relating to safety would include adoption of Safe Systems approach, as well as the delivery of road safety schemes. Ultimately the intention is to improve personal safety and security on Buckinghamshire's streets and public transport network. It is also noted that there are elements of the schemes relating to Public Transport that will also contain important safety elements.

Clearly delivering improved safety on the transport network will benefit all groups in society, though particular beneficial effects may be anticipated for vulnerable groups such as young people and those with certain disabilities such as sensory loss (hearing / sight). As

well as direct health benefits through a reduction in collisions, more indirect beneficial effects on wellbeing could be achieved through a reduction in travel related stress and a better sense of safety / security.

Safety measures in public transport infrastructure and mobility hubs, such as improved lighting, CCTV, and secure waiting areas at bus stops, rail stations, and mobility hubs, could improve confidence and reduce fear of crime, particularly for vulnerable groups including women, older people, children, disabled individuals, minority ethnic communities, LGBTQ+ individuals, and those who are pregnant or caring for young children.

Beneficial effects on the environment can also be anticipated. For example, a reduction in collisions would also lead to a reduction in pollution incidents, thereby benefiting the water and soil environment. Reduced speeds etc. may also reduce the potential for 'road kill', thereby benefitting wildlife. However, there may be some adverse effects on the environment from improving safety – for example increased lighting may have adverse effects on biodiversity, or indeed on some people, though overall effects on the environment are likely to be slight and mitigation should ensure these can be managed effectively.

Place shaping

The Interventions related to 'Place shaping' are anticipated to include measures to make streets more accessible such as incorporating a healthy streets approach in design. There will also be delivery of public space, urban realm and regeneration schemes. In addition, strategies will be developed to encourage sustainable and active travel to and from workplaces, as well as the delivery of safe walking, wheeling and cycling routes to local schools.

Effective 'place shaping' with a focus on prioritising walking and wheeling and reducing motorised vehicle use, would likely provide opportunities for sustainability benefits. For example, as well as reducing carbon emissions, such 'Places' would likely lead to improved air quality in these local areas which would be of particular benefit to a number of vulnerable groups such as children, the elderly and those with certain health conditions. Such groups (along with the wider population) would also benefit from reduced noise and other disturbance leading to reduced stress and increased general wellbeing, as well as reduced chance of collisions (through reduced speeds and vehicle numbers). Interventions made in accordance with effective place shaping would also help to increase physical activity with likely health benefits for all (though not all groups could benefit to the same degree).

Improved air quality in these local areas would also provide benefits to biodiversity, including indirectly to sites designated for nature conservation, through reducing pollution deposition. Interventions relating to 'place shaping' such as improved public realm would

also provide potential benefits to biodiversity by providing opportunities and space for planting. It would be recommended that planting should be with native species, of local provenance and as well as trees, should include wildflowers and other pollinators. In addition to local air quality improvements, such planting could help to sequester carbon (though this would be relatively minimal amounts).

Good quality public realm, increased green space, as well as a reduction in traffic would also likely provide benefits to townscape and help develop a 'sense of place' for people in the area, with potential wellbeing benefits. Reduction in speed limits in certain areas will also help to make the streetscape more appealing and greatly aid overall tranquillity through a reduction in noise. Revamped public realm, anticipated to likely include 'parklets' (or similar) and green spaces alongside pedestrian priority may also provide opportunities to enhance settings of buildings or monuments, Conservation Areas etc. In addition, redevelopment of town centres through for example revamping public realm etc. may also provide opportunities to address areas of contamination, invasive species etc.

As well as the built environment, the water environment could also benefit through the reduction in traffic and greater focus on active modes. It can be expected that the potential for pollution runoff from roads will reduce, as will the potential for spillage of hydrocarbons through collisions or during refuelling. The introduction of green spaces such as 'Parklets' would also provide opportunities to develop SuDS. The use of SuDS, as well as development of green spaces would also allow for a reduction in flood risk and help to improve climate resilience.

A focus on walking and wheeling in place shaping would likely reduce fuel use, though it is to be noted that other natural resources would likely be required to upgrade the public realm. Nevertheless, such areas could help to revitalise high street / local economies – such areas would be more attractive for shopping and doing business in and the acknowledged ongoing requirement for private car would allow those who have difficulty utilising active modes, or public transport (such as the elderly or those with certain disabilities or medical conditions) to continue to access such areas.

Highway Network

Interventions related to the Highway Network are anticipated to include maintenance and management of the network, delivery of parking schemes and the development of resilience schemes. A key element will be the delivery of new road infrastructure and there will also be the delivery of some green infrastructure measures.

It is anticipated that improvements to the highway network will bring some beneficial effects. For example, improved networks could lead to fast and reliable delivery of goods and services, potentially leading to increased economic activity. The improved network will also likely give the general population better access to city / town centres, potentially

leading to increased footfall and as such help revitalise the high street. Managing the highway network efficiently can reduce idling and emissions, while parking strategies and cycle infrastructure encourage more sustainable modes of transport and encourage a shift away from private car use. These measures will prevent behaviours that worsen air quality and by incorporating green infrastructure, they can improve air quality by absorbing pollutants.

However, it is clear that such Interventions will also require significant construction activities and effects are likely to arise as a result of direct land take as well as through construction activities that give rise to noise, dust / air / water pollution, light and visual pollution that may impact on natural and built environment receptors including biodiversity, the water environment, heritage features, local populations.

It is important to note that impacts arising from construction activities may disproportionately impact on vulnerable population groups such as children, the elderly, disabled, those on low income and those in more economically deprived areas. Large infrastructure projects are also likely to result in disruption to access to services and facilities. This may disproportionately impact on vulnerable groups who may not have access to private cars.

During operation, new infrastructure projects will result in new features in the landscape and may increase severance, with potential adverse effects on communities and individuals (with vulnerable groups such as children, the disabled and the elderly being potential most impacted). Such Interventions could also introduce new pressures on the local environment such as air, noise and visual pollution, as well as polluted runoff, associated with new road schemes. However, significant beneficial effects are also possible. For example, where some infrastructure projects may reduce congestion, others may encourage modal shift towards active and public transport methods therefore reducing pressures on air quality and on the transport network. Health and wellbeing improvements associated with improved connectivity, reduced journey length, as well as new and improved active travel networks and green infrastructure are also likely to be achievable.

Motor vehicles and Innovation

In relation to motor vehicles and Innovation, a range of potential Interventions have been identified. These include delivery of EV charging and car clubs, as well as support for E-Scooter trials and other transport innovation trials. Within these Interventions, of most potential significance is the further development of an EV network. This would help encourage and facilitate an uptake in electric vehicles, with consequent reductions in air and carbon emissions, as well as noise (with potential for benefits to both people and wildlife). There would also be a likely reduction in polluted runoff due to reduced potential for spillage of hydrocarbons (though heavier EV's may lead to an increased in pollution from brake and tyre wear).

Encouraging EV use and car sharing is expected to reduce congestion and pollution, helping preserve historic assets and the wider heritage environment. Reduced congestion can enhance townscapes and visual amenity while limiting the need for intrusive infrastructure like new or widened roads, helping protect wider landscapes. However, EV charging points themselves would also represent a new feature in the townscape and may not be appropriate for historic centres.

The cost of EV's (both vehicle and charging) may have implications for some groups such as those on low incomes, though other Interventions such as Car Clubs can help to address such issues. The perception of safety of EV's in relation to pedestrian's with sensory impairment (sight and hearing) also needs to be considered.

Conclusion

The proposed broad Intervention types set out within the LTP5 Implementation Plan provide a basis upon which many beneficial effects to the environment as well as local communities and visitors to Buckinghamshire can be realised. However, as noted, the proposed Interventions may also result in adverse effects on both the environment and people. As such, it is vital that further assessment is undertaken as Interventions 'come forward' for further design and planning. This requirement is recognised within LTP5, which notes that throughout the design and implementation process Buckinghamshire Council will ensure that they will proactively understand and take account of the potential impacts and will act to enhance resilience to the transport network to meet the challenges of the future. The LTP5 also notes that measures will be subject to the appropriate level of assessment during the design and planning stage, reflective of the scale and nature of the project. This will ensure that Buckinghamshire Council understand potential impacts and how these can be best avoided, mitigated, or enhanced where beneficial. LTP5 also notes that dependent on the scheme, assessment will include, as required, Health Impact Assessment, Equalities Impact Assessment, Habitats Regulation Assessment and Environmental Impact Assessment. In addition, LTP5 sets out that environmental and sustainability considerations will be made throughout implementation and operation, through for example measures such as Construction Environmental Management Plans.

Therefore, it is anticipated that this further assessment process will ensure that adverse effects can be minimised and beneficial effects maximised. This process will ensure detailed and ongoing consideration is given to the environment, as well as those protected characteristic groups or those considered vulnerable in terms of health outcomes noted in this ISA.

12. Mitigation

12.1 Introduction

The term mitigation encompasses any approach that is aimed at preventing, reducing or offsetting any significant adverse environmental effects that have been identified. In practice, a range of measures applying one or more of these approaches is likely to be considered in mitigating any significant adverse effects predicted as a result of implementing the LTP5. In addition, it is also important to consider measures aimed at enhancing positive effects. All such measures are generally referred to as mitigation measures.

However, the emphasis should be in the first instance on proactive avoidance of adverse effects. Only once alternative options or approaches to avoiding an adverse effect have been examined, should mitigation then examine ways of reducing the scale / importance of the effect.

Mitigation can take a wide range of forms, including:

- Refining intervention measures in order to improve the likelihood of positive effects and to minimise adverse effects.
- Technical measures (such as setting guidelines) to be applied during the implementation phase.
- Identifying issues to be addressed in project assessment (including but not limited to Environmental Impact Assessment, Health Impact Assessment, Equality Impact Assessment and the development of Environmental Management Plans) for certain projects or types of project.
- Proposals for changing other plans and programmes.
- Contingency arrangements for dealing with possible adverse effects – these could include for example pollution management plans, use of spill kits etc.

12.2 Mitigation approaches applied through ISA

A number of mitigation approaches have been used through development of the LTP5 in order to mitigate potential adverse effects. These have included the following:

Table 0-1 - How mitigation has been incorporated into the LTP5

Approach to mitigation	How has this been incorporated into the LTP5?
Refining the LTP in order to better reflect	Assessment was made of the LTP5 and recommendations were made in relation to clarifying and bolstering aspects of sustainability. Ongoing

Approach to mitigation	How has this been incorporated into the LTP5?
the ISA Objectives and improve the likelihood of positive effects and to minimise adverse effects	iterative discussion also took place with the Plan making team. New elements relating to sustainability was added to the LTP5 Implementation Plan and this sets out approaches to addressing sustainability issues going forward. Of particular note, clear commitment is made to undertaking as required, Health Impact Assessment, Equalities Impact Assessment, Habitats Regulation Assessment and Environmental Impact Assessment. Environmental and sustainability considerations will be made throughout implementation and operation, through for example measures such as Construction Environmental Management Plans. The focus areas for delivering the LTP5 also include many aspects of sustainability and clear linkages can be made to the ISA Objectives.
Refining Interventions / Measures in order to improve the likelihood of positive effects and to minimise adverse effects	High level interventions have been set out at this stage of LTP development and have been assessed in the ISA, with appropriate mitigation considered. The detailed mitigation for each intervention and how it will be applied will be clarified through further work that is yet to take place. Note that LTP5 sets out clear commitments by Buckinghamshire Council to undertake the required assessments at appropriate stages and this will inform consideration of mitigation through the design and planning phases.
Technical measures (such as requiring adherence to appropriate guidelines) to be applied during the implementation phase	Commitment is made within the LTP5 to undertake detailed environmental sustainability appraisals for all LTP5 supporting strategies that identify transport schemes. This will require adherence to guidance etc as required.
Identifying issues to be addressed in Scheme / Intervention assessment (i.e. at Project level), including but not limited to Environmental Impact Assessment and the development of Environmental Management Plans, for certain projects types of project	<p>The LTP5 clearly sets out a process of how environmental issues will be considered in future scheme development. The LTP5 Implementation Plan sets out that dependent on the scheme, assessment will include as required, Health Impact Assessment, Equalities Impact Assessment, Community Safety Assessment, Habitats Regulation Assessment and Environmental Impact Assessment.</p> <p><i>Note typical specific mitigation that may arise from interventions promoted under respective Intervention Types have been outlined in Section 12-3.</i></p>
Proposals for changing other plans and programmes	No proposals have been made to change other plans and programmes as LTP5 will act in accordance with a range of other plans and programmes for example, local development plan documents. There are also clear commitments made within LTP5 to work closely with partner organisations and other stakeholders including neighbouring authorities, to ensure that consideration of sustainability, including health and equality, is made at an early stage for schemes. Buckinghamshire Council will also work in partnership with external stakeholders, including government bodies, to improve transport in Buckinghamshire for all. Buckinghamshire Council will identify the types of assessment that are

Approach to mitigation	How has this been incorporated into the LTP5?
	appropriate for the scale and nature of the scheme at each stage of development and which organisation has responsibility for the assessment process. This will allow for full consideration of requirements in development plan documents and required statutory processes as necessary.
Contingency arrangements for dealing with possible adverse effects	<p>The ISA has proposed a series of monitoring indicators. It is anticipated that the monitoring programme will cover significant social, environmental and economic effects and which will involve measuring indicators that will enable the establishment of a causal link between the implementation of the LTP5 and the likely significant effects (both positive and negative) being monitored. This will allow identification at an early stage of unforeseen adverse effects and allow appropriate remedial action to be undertaken.</p> <p>Note is also made that Buckinghamshire Council has a statutory duty to monitor the performance of the LTP5 against their vision and objectives. Feedback from the monitoring process allows the LTP5 to be adjusted according to the actual performance against objectives. As noted in the LTP5, the document will be reviewed every 5 years to identify any changes or updates required to LTP5 to ensure it remains relevant.</p>

Note typical mitigation that may apply to interventions promoted under respective Intervention Types have been outlined for information in Table 12-2, as follows. **Note that mitigation for individual schemes would be developed further and expanded upon as part of the planning and design process and would be informed by any additional assessment such as EIA, HIA, HRA, EqIA and so on. The mitigation would then be detailed in a Construction Environmental Management Plan that would be enacted during the construction phase.**

12.3 Intervention Mitigation

The following table shows typical mitigation measures relevant to the different infrastructure types noted. Mitigation has been identified for intervention types likely to lead to development. Note that this mitigation is provided here for information only – further and more detailed mitigation would be developed as part of the design and planning process and would be specific to individual schemes. This design and planning process would be informed by further assessment such as HIA, EqIA, EIA and HRA.

Protect and improve air quality

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none">• Consideration of air quality in Construction Environmental Management Plans (CEMPs).• Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. <p>Operation</p> <ul style="list-style-type: none">• None identified.
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Design</p> <ul style="list-style-type: none">• Increase distances between traffic and sensitive receptors.• Consideration of the impact of the scheme on Air Quality Management Areas and potential scheme realignment if necessary.• Identify the potential for schemes to have a beneficial impact on Air Quality Management Areas. <p>Construction</p>

	<ul style="list-style-type: none"> • Consideration of air quality in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. <p>Operation</p> <ul style="list-style-type: none"> • Implement a management programme which aligns with the findings of the HRA.
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of air quality in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. <p>Operation</p> <ul style="list-style-type: none"> • None identified.
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • High Occupancy Lanes and Cycle Lanes in road infrastructure • Increase distances between traffic and sensitive receptors • Consideration of the impact of the scheme on Air Quality Management Areas and potential scheme realignment if necessary. • Identify the potential for schemes that may have a beneficial impact on Air Quality Management Areas <p>Construction</p>

-
- Consideration of air quality in Construction Environmental Management Plans (CEMPs).
 - Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. Use of zero emitting or low emitting vehicles/plant.
 - Consultation with operators of facilities used by vulnerable groups such as schools, hospitals and care homes.

Operation

- Management of vehicle speed
 - Encourage use of Low Emission Vehicles
-

Reduce the impact on environmental noise from transportation sources

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of noise in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise noise during construction, e.g. use of electric vehicle/plant. <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Increase distances between traffic and sensitive receptors • Encourage modal shift toward active travel • Integrate noise suppression/barriers where appropriate <p>Construction</p> <ul style="list-style-type: none"> • Methods to reduce noise during construction, e.g. use of electric vehicle/plant. • Consideration of noise in Construction Environmental Management Plans (CEMPs) • Use of construction noise barriers <p>Operation</p> <ul style="list-style-type: none"> • Implement a management programme which aligns with the findings of the HRA.
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>

Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.

Construction

- Consideration of noise in Construction Environmental Management Plans (CEMPs).
- Use of best practice construction techniques to minimise noise during construction, e.g. use of electric vehicle/plant.

Operation

- None identified.

Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

Design

- Increase distances between traffic and sensitive receptors
- Encourage modal shift toward active travel
- Integrate noise suppression/barriers where appropriate

Construction

- Methods to reduce noise during construction, e.g. use of electric vehicle/plant.
- Consideration of noise in Construction Environmental Management Plans (CEMPs)
- Use of construction noise barriers

Operation

- Management of vehicle speed
 - Encourage use of Low Emission Vehicles
-

Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of noise in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. <p>Operation</p> <ul style="list-style-type: none"> • None identified.
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of GHG emitting potential in the selection of materials. • Encourage further investment in low emission bus vehicles and electrification of rail. <p>Construction</p> <ul style="list-style-type: none"> • Consideration of carbon emissions in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise carbon emissions. Use of zero emitting or low emitting vehicles/plant. • Use of local sources for materials <p>Operation</p> <ul style="list-style-type: none"> • Implement a regular programme of maintenance and improvement. • Use of a carbon footprint calculator to monitor performance and

	identify areas for improvement.
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of noise in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the impact on air quality, e.g. ensuring all plant and machinery are well maintained and not emitting excessive fumes. <p>Operation</p> <ul style="list-style-type: none"> • None identified.
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Consideration of GHG emitting potential in the selection of materials • High Occupancy Lanes and Cycle Lanes • Increase distances between traffic and sensitive receptors <p>Construction</p> <ul style="list-style-type: none"> • Methods to reduce carbon footprint during construction e.g. use by contractor of carbon calculator • Setting energy targets and monitoring performance • Consideration of GHGs in Construction Environmental Management Plans (CEMPs) <p>Operation</p> <ul style="list-style-type: none"> • Management of vehicle speed • Encourage use of Low Emission Vehicles • Development and regular monitoring of KPIs

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- Use of a carbon footprint calculator to monitor performance and identify areas for improvement
 - Implement a regular programme of maintenance and improvement
-

Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Careful route selection – avoid flood areas if possible • Design to consider flood protection measures, flow routes and flood storage capacity <p>Construction</p> <ul style="list-style-type: none"> • Consideration of storm water runoff and dewatering operations in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the impact on flooding, e.g. use of temporary SuDS features to control site runoff <p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS (sized to allow for a changing climate)
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>
<p>Place-shaping – may include delivery of public space, urban</p>	<p>Construction</p>

realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.

- Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs)
- Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring

Operation

- None identified

Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

Design

- Careful route selection – avoid flood areas if possible
- Design to consider flood protection measures, flow routes and flood storage capacity

Construction

- Consideration of storm water runoff and dewatering operations in Construction Environmental Management Plans (CEMPs).
- Use of best practice construction techniques to minimise the impact on flooding, e.g. use of temporary SuDS features to control site runoff

Operation

- Use of SuDS (sized to allow for a changing climate)
-

Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of the timing of construction works in relation to ecological windows and legislative requirements • Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs) • Appropriate management of invasive species where applicable <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of the potential for ecological enhancement • Protect green corridors <p>Construction</p> <ul style="list-style-type: none"> • Consideration of the timing of construction works in relation to ecological windows and legislative requirements • Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs) • Appropriate management of invasive species where applicable <p>Operation</p> <ul style="list-style-type: none"> • Scheduled control of invasive species where necessary

	<ul style="list-style-type: none"> • Maintenance of BNG areas.
Safety – may include delivery of road safety schemes.	<p>Design</p> <ul style="list-style-type: none"> • Apply sensitive environmental design to avoid or minimise impacts on biodiversity, including protecting sensitive habitats and reducing light spill.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of the timing of construction works in relation to ecological windows and legislative requirements • Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs) • Appropriate management of invasive species where applicable <p>Operation</p> <p>None identified</p>
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Avoidance of designated sites • Consideration of the potential for ecological enhancement / Design to achieve Biodiversity Net Gain • Compensatory green infrastructure, including development of 'Green Streets' • Screening with native species • Development of wildflower meadows along route alignment or at junction islands, etc. <p>Construction</p> <ul style="list-style-type: none"> • Consideration of the timing of construction works in relation to

ecological windows and legislative requirements

- Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)
- Appropriate management of invasive species where applicable

Operation

- Scheduled control of invasive species where necessary
 - Maintenance of BNG areas.
-

Protect and enhance sites designated for their international importance for nature conservation purposes

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none">• Consideration of the timing of construction works in relation to ecological windows and legislative requirements• Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)• Appropriate management of invasive species where applicable <p>Operation</p> <ul style="list-style-type: none">• Implement a management programme which aligns with the findings of the HRA
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none">• Consideration of the potential for ecological enhancement• Protect green corridors <p>Construction</p> <ul style="list-style-type: none">• Consideration of the timing of construction works in relation to ecological windows and legislative requirements• Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)• Appropriate management of invasive species where applicable <p>Operation</p>

	<ul style="list-style-type: none"> • Scheduled control of invasive species where necessary • Maintenance of BNG areas • Implement a management programme which aligns with the findings of the HRA
Safety – may include delivery of road safety schemes.	<p>Design</p> <ul style="list-style-type: none"> • Apply sensitive environmental design to avoid or minimise impacts on biodiversity, including protecting sensitive habitats and reducing light spill.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of the timing of construction works in relation to ecological windows and legislative requirements • Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs) • Appropriate management of invasive species where applicable <p>Operation</p> <ul style="list-style-type: none"> • Implement a management programme which aligns with the findings of the HRA
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Avoidance of designated sites • Consideration of the potential for ecological enhancement / Design to achieve Biodiversity Net Gain • Compensatory green infrastructure, including development of 'Green Streets' • Screening with native species

-
- Development of wildflower meadows along route alignment or at junction islands, etc.

Construction

- Consideration of the timing of construction works in relation to ecological windows and legislative requirements
- Consideration of biodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)
- Appropriate management of invasive species where applicable

Operation

- Scheduled control of invasive species where necessary
 - Maintenance of BNG areas.
 - Implement a management programme which aligns with the findings of the HRA
-

Protect, enhance and promote geodiversity

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none">• Consideration of geodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)• Consideration of the potential for geodiversity enhancement <p>Operation</p> <ul style="list-style-type: none">• None identified
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Design</p> <ul style="list-style-type: none">• Avoidance of designated geodiversity sites• Consideration of the potential for geodiversity enhancement <p>Construction</p> <ul style="list-style-type: none">• Consideration of geodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs) <p>Operation</p> <ul style="list-style-type: none">• None identified
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none">• Consideration of geodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)• Consideration of the potential for geodiversity enhancement <p>Operation</p>

-
- None identified

Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

Design

- Avoidance of designated geodiversity sites
- Consideration of the potential for geodiversity enhancement

Construction

- Consideration of geodiversity and designated sites and habitats in Construction Environmental Management Plans (CEMPs)

Operation

- None identified
-

Protect and enhance cultural heritage assets and their settings, and the wider historic environment

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none"> • Any activities within close proximity which could cause damage or disturbance to heritage assets should be avoided and be managed via a CEMP. <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of character, setting, level of protection and potential need for conservation during planning and design • Consideration of opportunities for enhancement of known features of industrial and cultural heritage significance <p>Construction</p> <ul style="list-style-type: none"> • Precautions for unexpected heritage discovery during construction • Potential need for archaeological watching brief during construction, particularly in areas not previously developed • Consideration of unexpected heritage discovery in Construction Environmental Management Plans (CEMPs) <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>

<p>Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.</p>	<p>Construction</p> <ul style="list-style-type: none"> Any activities within close proximity which could cause damage or disturbance to heritage assets should be avoided and be managed via a CEMP. <p>Operation</p> <ul style="list-style-type: none"> None identified
<p>Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.</p>	<p>Design</p> <ul style="list-style-type: none"> Consideration of character, setting, level of protection and potential need for conservation during planning and design Consideration of opportunities for enhancement of known features of industrial and cultural heritage significance <p>Construction</p> <ul style="list-style-type: none"> Precautions for unexpected heritage discovery during construction Potential need for archaeological watching brief during construction, particularly in areas not previously developed Consideration of unexpected heritage discovery in Construction Environmental Management Plans (CEMPs) <p>Operation</p> <ul style="list-style-type: none"> None identified

Conserve and enhance the natural beauty of Buckinghamshire’s protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration during planning / design to landscaping and screening, with care taken in choice of materials and species used <p>Construction</p> <ul style="list-style-type: none"> • Use of best practice construction techniques and Construction Environmental Management Plan (CEMP) to ensure that the character and quality of landscapes and townscapes are maintained as far as practicable during construction <p>Operation</p> <ul style="list-style-type: none"> • None identified
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration during planning / design to landscaping and screening, with care taken in choice of materials and species used <p>Construction</p> <ul style="list-style-type: none"> • Use of best practice construction techniques and Construction Environmental Management Plan (CEMP) to ensure that the character and quality of landscapes and townscapes are maintained as far as practical during construction
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>

Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.

Design

- Consideration during planning / design to landscaping and screening, with care taken in choice of materials and species used

Construction

- Use of best practice construction techniques and Construction Environmental Management Plan (CEMP) to ensure that the character and quality of landscapes and townscapes are maintained as far as practicable during construction

Operation

- None identified

Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

Design

- Careful route selection, especially in rural areas. Particular protection to nationally designated areas required, with avoidance if possible
- Consideration during planning / design to landscaping and screening, with care taken in choice of materials and species used
- Consideration of potential opportunities for landscape enhancement

Construction

- Use of best practice construction techniques and Construction Environmental Management Plan (CEMP) to ensure that the character and quality of landscapes and townscapes are maintained as far as practicable during construction
 - Operation
 - None identified
-

Protect and enhance the water environment

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS and / or conventional pollution control techniques
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS and / or conventional pollution control techniques
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring

	<p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS and / or conventional pollution control techniques
<p>Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.</p>	<p>Design</p> <ul style="list-style-type: none"> • Explore opportunities for use of SuDS <p>Construction</p> <ul style="list-style-type: none"> • Consideration of water quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS and / or conventional pollution control techniques such as petrol interceptors

Protect soil resources and avoid land contamination

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none">• Consideration of soil quality and pollution in Construction Environmental Management Plans (CEMPs)• Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring• Use of SuDS and / or conventional pollution control techniques such as petrol interceptors to prevent soil pollution• Remediation of land contamination if in existence <p>Operation</p> <ul style="list-style-type: none">• None identified
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Design</p> <ul style="list-style-type: none">• Avoidance of best and most versatile agricultural land• Remediation of land contamination if in existence <p>Construction</p> <ul style="list-style-type: none">• Consideration of soil quality and pollution in Construction Environmental Management Plans (CEMPs)• Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none">• Use of SuDS and / or conventional pollution control techniques such as

	petrol interceptors to prevent soil pollution
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of soil quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring • Use of SuDS and / or conventional pollution control techniques such as petrol interceptors to prevent soil pollution • Remediation of land contamination if in existence <p>Operation</p> <p>None identified</p>
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Avoidance of best and most versatile agricultural land • Remediation of land contamination if in existence <p>Construction</p> <ul style="list-style-type: none"> • Consideration of soil quality and pollution in Construction Environmental Management Plans (CEMPs) • Use of best practice construction techniques to minimise the likelihood of a pollution incident occurring <p>Operation</p> <ul style="list-style-type: none"> • Use of SuDS and / or conventional pollution control techniques such as petrol interceptors to prevent soil pollution

Promote sustainable use of resources and natural assets

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of waste hierarchy and use of recycled or re-used materials in a Site Waste Management Plan (SWMP) <p>Operation</p> <ul style="list-style-type: none"> • None identified
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Design</p> <ul style="list-style-type: none"> • Sustainable design measures <p>Construction</p> <ul style="list-style-type: none"> • Consideration of waste hierarchy and use of recycled or re-used materials in a Site Waste Management Plan (SWMP) <p>Operation</p> <ul style="list-style-type: none"> • None identified
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of waste hierarchy and use of recycled or re-used materials in a Site Waste Management Plan (SWMP) <p>Operation</p> <ul style="list-style-type: none"> • None identified
Highway Network – may include delivery of new road	Design

infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

- Sustainable design measures

Construction

- Consideration of waste hierarchy and use of recycled or re-used materials in a Site Waste Management Plan (SWMP)

Operation

- Encourage the use of electric vehicles
-

Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage <p>Operation</p> <ul style="list-style-type: none"> • None identified
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage <p>Operation</p> <ul style="list-style-type: none"> • Implement a plan of maintenance and improvement to ensure that the connectivity to commercial / economic centres are maintained
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage <p>Operation</p> <ul style="list-style-type: none"> • None identified
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and	<p>Design</p> <ul style="list-style-type: none"> • Consideration of economic growth in design of new road infrastructure

delivery of parking schemes.

Construction

- Provide employment opportunities to unskilled / apprentices at construction stage

Operation

- Implement a plan of maintenance and improvement to ensure that the connectivity to commercial / economic centres is maintained
-

Support the wider coordination of land use and energy planning across Buckinghamshire

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of transport needs in relation to land use plans and planning requirements <p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of transport needs in relation to land use plans and planning requirements <p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>
<p>Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.</p>	<p>Design</p> <ul style="list-style-type: none"> • Consideration of transport needs in relation to land use plans and planning requirements <p>Construction</p> <ul style="list-style-type: none"> • Provide employment opportunities to unskilled / apprentices at construction stage
<p>Highway Network – may include delivery of new road</p>	<p>Design</p>

infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.

- Consideration of economic growth in design of new road infrastructure

Construction

- Provide employment opportunities to unskilled / apprentices at construction stage

Operation

- Implement a plan of maintenance and improvement to ensure that the connectivity to commercial / economic centres is maintained
-

Improve health and well-being for all citizens and reduce inequalities in health (*HIA specific objective*)

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Construction</p> <ul style="list-style-type: none">• Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP• Adherence to all relevant health and safety measures <p>Operation</p> <ul style="list-style-type: none">• Implement a plan of maintenance and improvement to ensure that footpaths and cycle lanes remain an attractive option
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none">• Consider opportunities to improve access• Consider potential for severance from key public services, or opportunities to improve access <p>Construction</p> <ul style="list-style-type: none">• Ensure consideration of access to key public services is maintained• Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP• Adherence to all relevant health and safety measures <p>Operation</p> <ul style="list-style-type: none">• Implement a plan of maintenance and improvement to ensure that

	<p>footpaths and cycle lanes remain an attractive option</p> <ul style="list-style-type: none"> • Regular reviews of ticket pricing / consideration of affordability
Safety – may include delivery of road safety schemes.	Minor works anticipated - no mitigation suggested.
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Construction</p> <ul style="list-style-type: none"> • Consideration of air quality in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP • Adherence to all relevant health and safety measures
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Consider opportunities to improve access • Consider potential for severance from key public services, or opportunities to improve access <p>Construction</p> <ul style="list-style-type: none"> • Ensure consideration of access to key public services is maintained • Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP • Adherence to all relevant health and safety measures <p>Operation</p> <ul style="list-style-type: none"> • Implement a plan of maintenance and improvement to ensure that

footpaths and cycle lanes remain an attractive option

Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (EqIA specific objective)

Intervention type	Typical specific mitigation for type of intervention
<p>Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.</p>	<p>Design</p> <ul style="list-style-type: none">• Opportunities to reduce inequalities should be integrated in design• Consider opportunities to improve access• Consider potential for severance from key public services, or opportunities to improve access <p>Construction</p> <ul style="list-style-type: none">• Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP• Adherence to all relevant health and safety measures <p>Operation</p> <ul style="list-style-type: none">• Implement a plan of maintenance and improvement to ensure that footpaths and cycle lanes remain an attractive option
<p>Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.</p>	<p>Design</p> <ul style="list-style-type: none">• Opportunities to reduce inequalities should be integrated in design• Consider opportunities to improve access• Consider potential for severance from key public services, or opportunities to improve access

	<p>Construction</p> <ul style="list-style-type: none"> • Ensure consideration of access to key public services is maintained • Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP • Adherence to all relevant health and safety measures <p>Operation</p> <ul style="list-style-type: none"> • Implement a plan of maintenance and improvement to ensure that footpaths and cycle lanes remain an attractive option • Regular reviews of ticket pricing / consideration of affordability
<p>Safety – may include delivery of road safety schemes.</p>	<p>Minor works anticipated - no mitigation suggested.</p>
<p>Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.</p>	<p>Design</p> <ul style="list-style-type: none"> • Opportunities to reduce inequalities should be integrated in design • Consider opportunities to improve access • Consider potential for severance from key public services, or opportunities to improve access <p>Construction</p> <ul style="list-style-type: none"> • Consideration of air quality in Construction Environmental Management Plans (CEMPs). • Use of best practice construction techniques to minimise annoyance and nuisance during construction, e.g. in relation to noise. This should be addressed in a CEMP • Adherence to all relevant health and safety measures

Promote community safety and reduce crime and fear of crime for all citizens (*CSA specific objective*)

Intervention type	Typical specific mitigation for type of intervention
Active travel – may include development / improvement of the walking, wheeling and cycling network and Rights of Way, and development of Buckinghamshire Greenway and Aylesbury Gardenway.	<p>Design</p> <ul style="list-style-type: none"> • Opportunities to improve safety should be integrated in design
Public transport – may include support for and development of the bus network, improvements to the rail network, and development of new mobility hubs.	<p>Design</p> <ul style="list-style-type: none"> • Opportunities to improve safety should be integrated in design
Safety – may include delivery of road safety schemes.	<p>Minor works anticipated - no mitigation suggested.</p>
Place-shaping – may include delivery of public space, urban realm and regeneration schemes and delivery of walking, wheeling and cycling routes to local schools and workplaces.	<p>Design</p> <ul style="list-style-type: none"> • Opportunities to improve safety should be integrated in design
Highway Network – may include delivery of new road infrastructure and green infrastructure measures, maintenance and management of the highway network and delivery of parking schemes.	<p>Design</p> <ul style="list-style-type: none"> • Consider opportunities to improve access • Consider potential for severance from key public services, or opportunities to improve access <p>Construction</p> <ul style="list-style-type: none"> • Ensure consideration of access to key public services is maintained

Operation

- Implement a plan of maintenance and improvement to ensure that footpaths and cycle lanes remain an attractive option
-

13. Cumulative, synergistic and indirect effects

13.1 Introduction

Under the SEA Regulations, there is a requirement to consider cumulative, synergistic and indirect effects of implementation of the LTP5. Secondary and indirect effects are effects that are not a direct result of the LTP5, but which occur away from the original effect or as the result of a complex pathway. Cumulative effects arise where several proposals or elements individually may or may not have significant effect but in-combination have a significant effect due to spatial crowding or temporal overlap. Synergistic effects are when two or more effects act together to create an effect greater than the simple sum of the effects when acting alone.

13.2 Likely cumulative effects

ISA Objectives which have the potential for cumulative effects have been identified from the analysis of plans and programmes, the baseline data, consultation responses and an examination of the identified key issues and cumulative, synergistic and indirect effects have also been considered during the ISA. These relate to air quality, carbon emissions, biodiversity, landscapes and townscapes, climate resilience, soil, agricultural resources and contaminated land, economic growth, health and well-being, equalities and community safety.

In plan cumulative effects

The results of the direct effects of the LTP5 proposals are discussed in Chapter 10. It is considered that the policy proposals can interact cumulatively across sustainability issues as shown in Table 13-1. The identification of these effects already takes into account the fact that recommendations to improve the sustainability performance of the LTP5 have been incorporated through iterative development between the ISA team and plan making team.

Table 13-1 – Anticipated cumulative, synergistic and indirect effects for LTP5

Effects	Causes	Significance
Air pollution emissions	It is considered that the Buckinghamshire LTP5 will act to improve air quality in the council area and will have an overall beneficial effect. This beneficial effect will be derived through application of a number of policy themes and commitments that seek to make it easier to use sustainable forms of transport (including walking, wheeling and cycling) with a comfortable and coherent network. Making public transport a viable and attractive option for residents reduces overall	Anticipated short to long term moderate beneficial effects. There will be likely some continuing emissions due to residual reliance on private cars (for example for those who are dependent upon due to not being able to adapt to other modes due to mobility issues) and

Effects	Causes	Significance
	<p>car dependency, reducing overall vehicle emissions, in addition to supporting the transition to electric vehicles from petrol/diesel cars will improve air quality across the LTP5 Plan Area.</p> <p>It is considered that the increased electrification and battery/hybrid trains with increased use of rail freight to reduce HGVs will reduce overall vehicle emissions and therefore improve air quality.</p> <p>There is potential for short term adverse effects on air quality through construction of mobility hubs, bus upgrades and rail projects from dust and emissions, in addition to dust and emissions from construction of strategic road improvements.</p> <p>The Intervention Type assessment has identified potential beneficial effects on air quality during operation for New Infrastructure Projects, Service Improvements and Regulation intervention types. As such, cumulative beneficial effects are anticipated across the plan area during operation as a result of interventions falling under these categories.</p>	<p>enhanced services (including increased frequency) of road / rail.</p>
Carbon emissions	<p>It is considered that the Buckinghamshire LTP5 will have an overall positive contribution towards reducing emissions within the Plan Area and will have an overall beneficial cumulative effect. This beneficial effect will be derived through application of a number of policy themes and intervention types. The largest contributor to reducing overall carbon emissions is to be from measures that improve travel choices, through encouragement of sustainable modes of transport. Measures to improve sustainable travel networks and accessibility to mobility hubs will have significant impacts by offering attractive alternatives to private cars. In addition, the electrification of rail and the deployment of battery/hybrid trains will reduce emissions from train services, with increased emphasis on freight transport through rail instead of HGVs will further reduce carbon emissions. Improved EV</p>	<p>Anticipated short to long term moderate beneficial effects. There will be likely some continuing emissions due to residual reliance on private cars (for example for those who are dependent upon due to not being able to adapt to other modes due to mobility issues) and enhanced services (including increased frequency) of road / rail. Negative emissions from new infrastructure projects which create induced demand also noted.</p>

Effects	Causes	Significance
	<p>charging infrastructure will encourage a shift towards electric vehicles, further contributing to a reduction in emissions. Measures to maintain and manage the highway network efficiently can reduce congestion and idling, lowering fuel consumption and emissions further.</p> <p>The majority of interventions are likely to have a positive contribution towards reducing transport emissions across Buckinghamshire. Innovation measures through introducing new sustainable technologies and drone for deliveries will have a minor impact, as only offer an alternative to delivery vans.</p> <p>Improved road safety will create a safer road environment, enabling more people to choose to walk, wheel and cycle, further contributing a slight reduction of carbon emissions.</p> <p>However, there are short term adverse effects anticipated during construction and operation through strategic road improvements, from emissions during construction and an improved road network may promote private car use.</p>	
Biodiversity	<p>Cumulative beneficial effects can be anticipated through policy themes and their commitments, which put an emphasis on reducing carbon emissions through encouraging sustainable modes of transport and promoting a shift away from private vehicle use and thereby reducing pollution, benefitting local ecosystems and sites designated for nature conservation.</p> <p>Incorporation of green infrastructure into new schemes and interventions, and the maintenance of existing infrastructure will enhance biodiversity and contribute to Biodiversity Net Gain. An overall commitment to active and public transport will likely reduce disturbance to habitats, species and sites designated for nature conservation.</p> <p>Considerate land use planning, appropriate routing and promoting rail freight can help minimise habitat fragmentation and further reduce pollution pressures on ecosystems.</p> <p>In respect of new infrastructure projects and</p>	<p>While effects in the short terms likely to be a mix of slight adverse and slight beneficial, ultimately, if net biodiversity gain is achieved, then a more substantial beneficial effect can be anticipated.</p>

Effects	Causes	Significance
	<p>schemes, there is potential for slight adverse effects through habitat fragmentation and biodiversity loss. Indirect effects associated with construction and operation of new infrastructure projects may also be realised where there are overlapping construction periods, reduced proximity between respective project construction sites and presence of ecological receptors. Where schemes introduce new pressures on biodiversity (e.g. new road schemes introducing air, noise and light pollution), such adverse cumulative effects may persist through the operational phase.</p> <p>In respect of the HRA Stage 1 and Stage 2 Report, an in-combination assessment will need to be considered at a lower level of plan-making, once more details are available and particularly at the project-stage when more specific information about proposed development can be obtained</p>	
<p>Resilience to climate change, including flooding</p>	<p>It is considered that the policy themes included within the LTP5 will act to improve the resilience of Buckinghamshire's transport network against climate change.</p> <p>A move away from private car use and towards active travel methods of transport may reduce the need for new roads in the future. In addition, any new transport infrastructure will include flood risk measures, which could feature new innovative flood resilience technologies, increasing overall resilience to extreme weather events.</p> <p>Additionally, new technologies could help people plan journeys better and take account of extreme weather events, increasing adaptability and resilience of the transport network to a changing climate. Incorporating green infrastructure provides resilience benefits, with improved drainage and enhanced cooling during heatwaves.</p> <p>New areas of road infrastructure could result in new areas of hardstanding, which could lead to increased surface runoff, however these new infrastructure schemes would be expected to incorporate flood risk measures</p>	<p>While there may be some minor adverse effects, ultimately there will be beneficial effects through incorporating flood resilience measures into new infrastructure schemes.</p>

Effects	Causes	Significance
Landscapes / townscapes	<p>into the design.</p> <p>It is anticipated that policy themes from the LTP5 will result in slightly adverse and slightly beneficial effects on landscapes across Buckinghamshire. Beneficial effects could be derived from a reduction in congestion (as a result of a shift of more people to active and public transport), which could enhance landscapes and townscapes etc. by removing traffic (including HGVs) and improving overall visual amenity. Furthermore, a reduction in car use will reduce the need for new roads in the future, further protecting landscapes and townscapes. Additionally, green infrastructure incorporated into schemes will help maintain and enhance natural features, reducing the visual impact of highways.</p> <p>In respect of new infrastructure projects, there is potential for direct cumulative adverse effects on landscape where new features are introduced (such as new roads, bridges and other infrastructure). Indirect effects associated with construction and operation of new infrastructure projects may also be realised where there are overlapping construction periods, reduced proximity between respective project construction sites and presence of sensitive landscape receptors. Where schemes introduce new pressures on landscape (e.g. on amenity as a result of new road schemes), such adverse cumulative effects may persist through the operational phase.</p>	Anticipated slight beneficial and adverse effects over the medium to long term as schemes are implemented.
Soil, agricultural resources and contaminated land	<p>There will be a range of cumulative beneficial and adverse effects on soil, agricultural resources and contaminated land. Beneficial effects from the LTP5 policy could be derived from a reduction in congestion (as a result of a shift of more people to active and public transport), which could help to avoid contamination by reducing the amount of polluted runoff to surrounding areas or reduce pollution runoff from vehicles from collisions. A reduction of HGV vehicles will reduce soil erosion. In addition to this, the inclusion of sustainability appraisals for</p>	Anticipated slight beneficial and adverse effects over the medium to long term as schemes are implemented.

Effects	Causes	Significance
	<p>supporting strategies may encourage efficient land use and resource management, supporting long-term sustainable use of resources and natural assets. Slight beneficial effects could come from incorporating green infrastructure into schemes which improves infiltration and soil stability. The transition to electric vehicles will reduce fossil fuel use and lead to more sustainable form of transport. At the intervention level, the development of road infrastructure, mobility hubs, bus upgrades and rail projects provide an opportunity for positive effects relating to the remediation of potentially contaminated land, but it may also provide an opportunity for further land to become contaminated and could potentially impact soil resources from runoff from increased amounts of impermeable surfaces which could affect water quality.</p>	
Economic growth	<p>Policy themes within the LTP5 are anticipated to bring significant beneficial effects. It is expected that sustainable and active travel options provide affordable travel options and can help people access jobs and services easily. There are slightly beneficial for vulnerable groups as it increases accessibility for them as they will feel an increased level of safety on public transport. Additionally, the policy themes will bring increased investment from increased connectivity and investment in transport corridors, leading to economic growth. The policies will also reduce overall travel times, leading to increased efficiency of the movement of goods and people.</p>	<p>Anticipated beneficial effects over the short and medium to long term as policy and schemes are implemented.</p>
Health and wellbeing, equalities and community safety	<p>On the whole, cumulatively, the LTP5 will act to promote health and well-being and equalities through providing greater access to services and employment opportunities, as well as greater opportunities for active travel. There is also a clear emphasis on improving the safety and accessibility of the road network, which brings beneficial effects to vulnerable groups within the plan area. Additionally, increased active travel improves</p>	<p>Anticipated moderate beneficial effects over the medium to long term as schemes and policy are implemented. Significant cumulative adverse effects identified.</p>

Effects	Causes	Significance
	<p>overall physical health, through increased uptake of walking, wheeling and cycling. Natural England research (EIN065⁵¹, EIN066⁵²) highlights strong links between access to natural environments and improved physical activity, mental wellbeing, reduced stress, and enhanced overall health. Therefore, LTP5 policies that enhance active travel networks are expected to result in health and wellbeing benefits.</p> <p>In addition to this, an overall reduction in private car use is expected to bring significant health and equality benefits from a reduction in emissions, thereby reducing air pollution. Schemes like club car schemes will bring significant benefits to groups who cannot afford or access a private car.</p> <p>Vulnerable groups like the physically disabled and elderly may struggle to take advantage of the improved active travel networks but will gain significant beneficial effects from the reduced air pollution. Groups that are less likely to have access to private vehicles, such as children, older adults, people with disabilities, and low-income households, may experience fewer benefits, highlighting potential inequalities. There may be significant adverse effects from club car schemes include a poor perception of safety around them with certain groups such as woman, people of certain ethnicities, faith or sexual orientations may feel particularly unsafe.</p>	

In combination cumulative effects with other plans and projects

The ISA has also considered other plans and projects that might lead to cumulative effects when combined with the Buckinghamshire LTP5. Please also see Table 6-1 of the HRA Report for assessment of in-combination effects in respect of European Sites.

⁵¹ Natural England (2022) *Links between natural environments and mental health (EIN065)*. Available: [Links between natural environments and mental health - EIN065](#)

⁵² Natural England (2022) *Links between natural environments and physical health (EIN066)*. Available: [Links between natural environments and physical health - EIN066](#)

Table 13-2 – Cumulative effects with other plans

Plan	Overview	Potential for cumulative effects with LTP5
Buckinghamshire Local Development Scheme (2025)	<p>The Buckinghamshire Local Development Scheme (LDS) sets out Buckinghamshire Council’s work programme for the main planning policy documents to be prepared over period between 2025 to 2028.</p> <p>The LDS explains:</p> <ul style="list-style-type: none"> • what local plans Buckinghamshire Council will work on • what will be in the plans and where they will apply • how long it will take to prepare the plans • what kind of plans they are 	<p>It is anticipated that the plans would cumulatively support sustainable development by improving access to new development and ensuring transport investment aligns with the Local Plan’s spatial strategy and development management policies. It is anticipated that cumulative effects will be beneficial.</p>
The Local plan for Buckinghamshire	<p>Work is currently underway to produce the Local Plan for Buckinghamshire.</p> <p>A Local Plan shows where development can happen, and protected places where it needs to be carefully controlled.</p> <p>The Local Plan is the prime consideration when determining planning applications, unless material considerations indicate otherwise. A material consideration is a matter that should be taken into account in deciding a planning application or an appeal.</p> <p>This document sets out parts of the draft Local Plan that have been prepared to date, which includes:</p>	<p>The Local plan and LTP5 are expected to support sustainable development by aligning future growth with improved transport connectivity and infrastructure. The LTP5 includes a policy to align the LTP5 and Local Plan, adopting a vision-led approach to transport planning and embedding the LTP5 policies in spatial planning and land use decision making. However, development of new infrastructure may create pressures on the natural and built environment. It is anticipated that cumulative effects will be a mix of beneficial and adverse.</p>

	<ul style="list-style-type: none"> • Part A: The Local Plan vision, key planning issues facing Buckinghamshire and associated objectives, spatial strategies for housing and employment, and ways to meet travelling communities accommodation needs • Part B: Development Management Policies.” 	
Buckinghamshire Bus Service Improvement Plan (2024)	<p>Buckinghamshire Bus Service Improvement Plan (BSIP) represents the plan to establish buses as a key travel mode in Buckinghamshire, providing connectivity and accessibility for all with safe, reliable and regular bus services. It has been developed in partnership with operators and sets out the vision, objectives and measures to improve local bus services in Buckinghamshire. The aims include:</p> <ul style="list-style-type: none"> • More frequent and reliable services • Improvements to planning / integration with other modes • Improvements to fares and ticketing • Improvements to passenger engagement 	<p>Buckinghamshire BSIP and LTP5 are expected to strengthen sustainable transport provision across the county. LTP5 includes policies to deliver and update the BSIP. By prioritising bus improvement schemes, the LTP5 directly supports the BSIP’s aims for more frequent and reliable services. Together, the plans are expected to support a shift toward public transport in Buckinghamshire. However, development of infrastructure has the potential for adverse effects on the environment through noise and air pollution, habitat fragmentation and land-use change. Therefore, there may be a mix of adverse and beneficial cumulative effects.</p>
Climate Change and Air Quality Strategy (2021)	<p>This document sets out the strategy for helping achieve national air quality objectives and zero carbon ambitions. It details over 60</p>	<p>The LTP5 aims to ensure that traffic noise and air quality impacts on communities are minimised. LTP5 measures to shift trips to active travel,</p>

	<p>actions to address climate change and poor air quality regarding council operations, our work and contracts with partners and suppliers, and how we influence activity county-wide. The following aims of this strategy address climate change and poor air quality across Buckinghamshire:</p> <ul style="list-style-type: none"> • Work alongside national Government with the objective to achieve net zero carbon emissions for Buckinghamshire as a whole by 2050. • Improve air quality across Buckinghamshire pursuant to achieving national air quality objectives. 	<p>public transport and electric vehicles align with the Climate Change and Air Quality Strategy. Together, the plans support sustainable travel modes and lower emissions from transport. While some construction associated with the LTP5 schemes may generate minor short-term emissions, cumulative effects are anticipated to be beneficial.</p>
Corporate Plan (2025)	<p>The Corporate Plan outlines the ambitions and priorities for Buckinghamshire Council. The key priorities are:</p> <ul style="list-style-type: none"> • increasing prosperity • strengthening our communities • improving our environment • protecting the vulnerable 	<p>The LTP5 includes policies that align with the priorities of the Corporate Plan. The LTP5's focus on enhancing sustainable travel, improving public and active transport, reducing emissions and supporting safe, accessible streets aligns closely with the Corporate Plan's environmental and community wellbeing priorities. Together, LTP5 and the Corporate Plan support cleaner, healthier places with improved access to jobs, services and opportunities. Effects are anticipated to be cumulatively beneficial.</p>
Buckinghamshire Air Quality Action Plan (2024)	<p>Buckinghamshire Council produced an Air Quality</p>	<p>The LTP5 aims to ensure that traffic noise and air quality</p>

	<p>Action Plan (AQAP) with the aim of reducing concentrations within local AQMAs to below the government's objectives.</p>	<p>impacts on communities are minimised. LTP5 measures to shift trips to active travel, public transport and electric vehicles align with the Air Quality Action Plan. Together, the plans support lower emissions from transport. While some construction associated with the LTP5 schemes may generate minor short-term emissions, cumulative effects are anticipated to be beneficial.</p>
<p>Buckinghamshire Local Cycling and Walking Infrastructure Plan (2025)</p>	<p>Buckinghamshire Council have developed a council-wide LCWIP that outlines a high-level walking, cycling and wheeling network across Buckinghamshire. The LCWIP focuses on opportunities for strategic connections between settlements and to key destinations, including:</p> <ul style="list-style-type: none"> • employment • education • public transport hubs and networks • town and village facilities • countryside and visitor attractions • neighbouring authority areas 	<p>The LTP5 and the Buckinghamshire LCWIP are expected to result in beneficial cumulative effects as both plans prioritise the creation of a high-quality, strategic walking, cycling and wheeling network. The LTP5 commits to developing walking, wheeling and cycling routes in line with LCWIP priorities. Combined with the LCWIP's focus on linking key destinations, the two plans collectively support active travel, reduce reliance on car travel and support healthier, low-carbon travel. While short-term adverse construction impacts may arise, the overall cumulative effect is expected to be beneficial.</p>
<p>Buckinghamshire Highways Resilient Network Plan 2025</p>	<p>This Resilient Network Plan explains how Buckinghamshire Highways develops and defines its Resilient Network and how it contributes to the Council's wider resilience programme.</p>	<p>Both plans prioritise safeguarding key routes and strengthening Buckinghamshire's resilience during severe weather events. The LTP5 includes a policy to maintain the</p>

	<p>Buckinghamshire Highways maintains a defined Resilient Network: a selection of key roads that are critical for keeping the county functioning during severe weather events. These roads are prioritised for operational or maintenance activities such as gritting and snow clearance to ensure they remain open and safe for use, especially during hazardous conditions.</p> <p>This network includes routes that are essential for emergency services, public transport, access to hospitals, schools, and key employment areas. By focusing resilience efforts on these roads, we ensure that vital connections are maintained even when the wider network may be affected by disruption.</p>	<p>Resilient Network Plan and continue to prioritise key roads that form our resilient network. LTP5 measures, such as reducing embodied carbon in maintenance and incorporating green infrastructure into highway schemes, align the Resilient Network Plan's aims to ensure connectivity is maintained during disruption and support climate change adaptation. While some construction associated with the LTP5 schemes may generate minor short-term emissions, cumulative effects are anticipated to be beneficial.</p>
<p>Buckinghamshire Electric Vehicle Action Plan 2022 – 2027</p>	<p>This document represents Buckinghamshire Council's first 5-year Action Plan to support the transition to Electric Vehicles (EVs). The aim of this is to reduce carbon emissions and improve air quality as set out in the Council's Climate Change and Air Quality Strategy (2021).</p>	<p>The LTP5 includes a policy aiming to support the transition to Electric Vehicles in accordance with the Electric Vehicle Action Plan. LTP5 policies for EV uptake and charging provision support the Electric Vehicle Action Plan's programme to expand EV infrastructure and accelerate adoption. Together, the plans will help to reduce carbon emissions and improve air quality. While some construction associated with installing new charging infrastructure schemes may generate minor short-term emissions, cumulative effects are anticipated to be beneficial.</p>

<p>Buckinghamshire Freight Strategy 2018 - 2036</p>	<p>This Freight Strategy analyses the impact freight is having in Buckinghamshire and looks ahead to the impact it might have in 2036. It sets out what can be done to harness the benefits of freight and manage its impact.</p> <p>The Freight Strategy is divided into four sections. These cover Buckinghamshire Council's objectives for freight in Buckinghamshire, the existing freight conditions locally, challenges and opportunities to manage freight and how the Strategy will be delivered.</p>	<p>Both plans recognise the importance of freight to the local economy and the need to manage its impacts on communities and the environment. The LTP5 includes a policy to deliver the Freight and Logistics Strategy objectives. The LTP5 aims to support the safe and efficient movement of freight and reduce the number of freight vehicles in towns and villages, supporting the Freight Strategy's aims to better manage freight movements and address local challenges. However, as freight demand grows toward 2036, there may also be cumulative pressures on the highway network and sensitive locations where freight routes and new transport interventions coincide. Cumulative effects are anticipated to be beneficial, although some adverse effects may arise due to increased pressures on the transport network and the surrounding environment.</p>
<p>Buckinghamshire Council's Getting to School Strategy (2024)</p>	<p>This strategy outlines how Buckinghamshire Council will promote the use of sustainable modes of travel to schools, colleges, and other education centres. It includes the transport needs of students aged 16+, and pupils with Special Education Needs or Disabilities. This strategy fulfils the statutory duty to publish and maintain</p>	<p>The LTP5 and Getting to School Strategy both promote safe, accessible and sustainable travel for young people. The LTP5's active travel and public transport policies align with the Getting to School Strategy's focus on increasing walking, cycling, wheeling and public transport use for school journeys. Together, the plans</p>

	<p>a Sustainable Modes of Travel Strategy (SMoTS). It assesses current travel needs and facilities, and sets out actions to reduce congestion, improve health and wellbeing, and encourage sustainable travel choices among families and education providers.</p>	<p>are expected to result in reduced congestion around schools, improved health and wellbeing, and better travel options for young people. While some short-term impacts may arise from new infrastructure, cumulative effects are anticipated to be beneficial.</p>
<p>Buckinghamshire Council's Parking Strategy (2024)</p>	<p>Buckinghamshire Council's Parking Strategy sets out its long-term ambitions for parking across the county, structured around five strategic priorities: Technology and Innovation, Parking Charges, Enforcement, Parking Assets, and Future Planning.</p>	<p>The LTP5 reinforces the Parking Strategy through its commitment to continually review the best model for delivering parking services and to ensure that parking in new developments is high quality and aligned with Local Plan and LTP5 objectives. Together, the two plans can help manage parking demand, reduce congestion, and support shifts to active travel, public transport and shared mobility. While some localised impacts may arise where changes to parking provision alter travel or parking patterns, the overall cumulative effect is anticipated to be beneficial.</p>
<p>Buckinghamshire Council Rights of Way Improvement Plan 2020 to 2030</p>	<p>This plan sets out the council's priorities and how they will improve public rights of way for residents and visitors over the next 10 years.</p>	<p>The LTP5 includes a policy to maintain and enhance the public rights of way network to ensure it is accessible, safe, well signposted and in a suitable condition to support active travel, in response to the Local Plan and in accordance with the Rights of Way Improvement Plan. The Buckinghamshire Rights of Way Improvement Plan's long-term priorities to</p>

		<p>improve the condition, signage and usability of paths for residents and visitors complement LTP5 policies to expand and upgrade walking, wheeling and cycling routes, including connections within and between settlements. Together, the plans support opportunities for active travel, encourage healthier travel behaviours and improve access to the countryside. While minor localised impacts may arise where path upgrades or new links require construction works, the overall cumulative effect is anticipated to be beneficial.</p>
<p>Buckinghamshire Council Highways Asset Management Strategy 2021</p>	<p>This strategy outlines a long-term, risk-based approach to maintaining and improving the county's highway infrastructure. Covering key asset groups, including carriageways, structures, footways, ITS, and street lighting, the strategy promotes continuous improvement and adaptability.</p>	<p>The LTP5 directly supports the strategy through its commitment to maintain the highway network in line with the Highway Infrastructure Asset Management Policy. Together, the two plans support more efficient asset management, improved network reliability and better conditions for active and sustainable travel. While some maintenance and improvement works may result in short-term disruption, the overall cumulative effect is anticipated to be beneficial.</p>
<p>Buckinghamshire Joint Local Health and Wellbeing Strategy 2022 to 2025</p>	<p>This strategy outlines the commitments made by partners on the Buckinghamshire Health and Wellbeing Board to improve residents' health and</p>	<p>The LTP5 and Buckinghamshire Joint Local Health and Wellbeing Strategy both include measures aiming to improve residents' health, wellbeing</p>

	<p>wellbeing and reduce health inequalities. The Buckinghamshire Health and Wellbeing Board’s aims include making a visible impact on health outcomes, placing residents at the heart of their work, and delivering statutory responsibilities through integrated health and social care services across the county.</p>	<p>and reduce inequalities. The LTP5 policies that support the Health and Wellbeing Strategy including incorporating a Healthy Streets approach and putting the needs of people first in street, public space and neighbourhood design, promoting active travel and enhancing road safety. Together, the plans can help create healthier neighbourhoods, support physical activity, and improve access to key services, although construction of new infrastructure associated with the plans may temporarily affect nearby communities. Overall, cumulative effects are anticipated to be positive.</p>
<p>Buckinghamshire Physical Activity Strategy 2024 – 2029</p>	<p>The purpose of this strategy is to provide clear guidance to help drive an increase in movement and physical activity levels of Buckinghamshire residents. This strategy sets out 4 key evidence-based principles that provide the framework for incorporating activity into everyday life. The vision of the strategy is to create a future where all residents across Buckinghamshire lead an active and healthy lifestyle.</p>	<p>The LTP5 promotes walking, cycling and wheeling through expanded active travel networks and safer, more accessible streets, directly reinforcing the Buckinghamshire Physical Activity Strategy’s vision for all residents to lead active and healthy lives. Together, the plans can reduce inactivity, support healthier communities and improve access to local facilities. Although minor adverse impacts may occur during the delivery of new infrastructure, the cumulative effect is anticipated to be beneficial overall.</p>

<p>Buckinghamshire Healthy Ageing Strategy 2024 – 2029</p>	<p>The purpose of this strategy is to create a shared vision for how Buckinghamshire can be a better place for older residents to live healthy and active later lives now and in the future.</p>	<p>The LTP5’s focus on improving accessible active travel and public transport routes and enhancing safety aligns with the Healthy Ageing Strategy’s vision for enabling older people to live healthy and active lives. Together, the plans may enhance access to services, reduce social isolation and improve safety and mobility for older residents. While some infrastructure works may cause short-term disruption, the overall cumulative effect is anticipated to be positive.</p>
<p>Regeneration Bucks – Transforming for the Future: The Buckinghamshire Regeneration Framework (2023)</p>	<p>This framework sets out a shared understanding of the role people and places can play in achieving transformation and growth within the county. The framework:</p> <ul style="list-style-type: none"> • Sets out Buckinghamshire Council’s vision for place-based regeneration and the priorities that will underpin delivery of their ambitions for Buckinghamshire. • Establishes a regeneration approach, guides investment, and focuses action as a non-statutory document. • Enables effective local partnership working, encouraging collaborative 	<p>The LTP5 and the Buckinghamshire Regeneration Framework both promote regeneration and improved quality of public spaces. Through its policy commitment to support delivery of the Regeneration Framework through public space design and allocation, LTP5 directly reinforces the Framework’s aims to transform places, guide investment and strengthen local partnerships. Together, the two plans can enhance the accessibility and functionality of town centres and neighbourhoods, improve connectivity, and help promote funding for local initiatives. While regeneration and transport improvements may lead to some construction impacts or increased pressure in sensitive areas, the overall</p>

	<p>approaches to addressing local challenges and sharing best practice.</p> <ul style="list-style-type: none"> • Provides a basis to develop strong cases for investment for local initiatives and supports the pursuit of external funding opportunities 	<p>cumulative effect is anticipated to be positive.</p>
<p>Buckinghamshire Economic Growth Plan (2025)</p>	<p>This Economic Growth Plan introduces an economic vision for the next decade. It gives a clear statement of intent to deliver economic growth and increased productivity, to grow Buckinghamshire’s most productive sectors, grow a skilled and diverse workforce, deliver more affordable housing and achieve investment in infrastructure.</p>	<p>The LTP5 includes policies aiming to enhance connectivity, reduce congestion and improve sustainable travel options, such as by improving active travel and public transport options. These measures support the Economic Growth Plan, which focuses on growing high-value sectors, expanding the skilled workforce, delivering more affordable housing and securing infrastructure investment. Through better public space design and strengthened transport links, the LTP5 supports regeneration and growth ambitions as set out in the Economic Growth Plan. While increased development may increase pressures on the environment, the overall cumulative effect is anticipated to be positive, helping enable a more productive, well-connected and resilient economy.</p>
<p>Aylesbury Transport Strategy (2017)</p>	<p>The Aylesbury transport strategy sets out the improvements needed to</p>	<p>The LTP5 and the Aylesbury Transport Strategy are expected to have</p>

	<p>support proposed growth in the town between 2016 to 2033. The strategy also addresses current issues on the transport network. The main transport improvements identified in the Aylesbury Transport Strategy are:</p> <ul style="list-style-type: none"> ▪ implementing a series of link roads around the town to divert cross town and through town traffic ▪ improving cycling and pedestrian links ▪ improving transport links to the Aylesbury train stations ▪ improving the local and regional bus network ▪ upgrading the existing bus station ▪ ensuring accessibility for all within the town and to key destinations 	<p>predominantly beneficial cumulative effects, as both plans aim to improve connectivity, support planned growth and enhance sustainable travel within Aylesbury. The Aylesbury Strategy's focus on new link roads, upgraded walking and cycling routes, improved access to rail stations and enhanced bus services aligns closely with LTP5 measures to promote active travel, strengthen public transport networks and improve accessibility for all. Together, the two plans are expected to reduce congestion and support sustainable transport modes in Aylesbury. While the delivery of transport infrastructure may result in some adverse environmental or construction impacts, the overall cumulative effect is anticipated to be positive.</p>
<p>Aylesbury Garden Town Local Cycling and Walking Plan (2019)</p>	<p>The Aylesbury Garden Town LCWIP recommends improvements to walking, cycling and wheeling routes in and around Aylesbury and identifies opportunities for new and improved links with nearby surrounding settlements.</p> <p>The Aylesbury Gardenway is a proposed 18km orbital park that will encircle Aylesbury and delivered in phases over several years. The route will connect with existing and proposed walking, cycling and wheeling routes providing a</p>	<p>The LTP5 and the Aylesbury Garden Town LCWIP are expected to have positive cumulative effects, as both plans focus on expanding and improving walking, cycling and wheeling networks in and around Aylesbury. The LCWIP's proposals for enhanced active travel links directly align with LTP5 policies to create coherent, safe and attractive active travel routes across the county. Together, these plans strengthen opportunities for sustainable travel, support</p>

	<p>green corridor to surrounding villages and the local countryside.</p>	<p>health and wellbeing, and improve access to the countryside. While some construction impacts may occur during delivery of new routes, the overall cumulative effect is anticipated to be beneficial.</p>
<p>Buckingham Transport Strategy (2018)</p>	<p>The Buckingham transport strategy aims to propose measures that address transport as a whole, rather than each individual development. The strategy also addresses existing transport issues in the town. The main improvements identified are:</p> <ul style="list-style-type: none"> • Western Link Road - single carriageway between Stowe Ave and A421 with the aim of reducing traffic (including HGV) movements through the town centre • route downgrade of West Street and Brackley Rd • improving bus connections to Winslow • expanding or relocating the town centre bus stand • improving walking and cycling accessibility within the town and to other destinations such as Milton Keynes and 	<p>The LTP5 and the Buckingham Transport Strategy are expected to have predominantly beneficial cumulative effects, as both plans aim to improve connectivity, reduce traffic impacts and enhance sustainable travel within and around Buckingham. The Buckingham Strategy's proposals, including delivery of the Western Link Road to divert traffic from the town centre, downgrading routes such as West Street and Brackley Road, improving bus connections to Winslow, expanding the town centre bus stand, and strengthening walking and cycling links, align closely with LTP5 objectives to support active travel, enhance public transport and manage the highway network more effectively. Together, the plans reinforce efforts to reduce congestion and improve accessibility. While the delivery of transport infrastructure may result in some adverse environmental or construction impacts, the overall cumulative effect is anticipated to be positive.</p>

	Silverstone	
Buckingham Local Cycling and Walking Plan lite (2020)	<p>The Buckingham LCWIP-lite recommends improvements to walking, cycling and wheeling routes in and around Buckingham and identifies opportunities for new and improved links with nearby surrounding settlements.</p>	<p>LTP5 and the Buckingham LCWIP-lite are expected to have positive cumulative effects, as both plans aim to improve walking, cycling and wheeling routes in and around Buckingham and strengthen connections with surrounding settlements. The LCWIP-lite's recommendations for enhanced active travel links align with the LTP5 policies to deliver coherent, safe and attractive active travel networks. Together, the two plans reinforce opportunities for sustainable travel, support physical activity and improve accessibility. While the delivery of new routes and infrastructure may result in some adverse environmental or construction impacts, the overall cumulative effect is anticipated to be positive.</p>
High Wycombe Transport Strategy (2024)	<p>The High Wycombe 2050 transport strategy outlines a balanced approach to future transport through a range of proposed transport interventions focused in and around the High Wycombe area.</p> <p>The strategy aims to address the town's transport challenges by setting an ambitious vision and 3 key objectives that aim to:</p> <ul style="list-style-type: none"> allow everyone to access important destinations, services and travel hubs by 	<p>The LTP5 and the High Wycombe Transport Strategy are expected to have positive cumulative effects, as both plans promote improved connectivity and sustainable travel choices. The Strategy's objectives, including to provide attractive alternatives to the car, strengthen digital, energy and transport connections across the Thames Valley and beyond, and enhance health and wellbeing through safe, accessible routes to the town and its surrounding</p>

	<p>providing and promoting attractive alternatives to the car, making best use of technology and reducing the need to travel</p> <ul style="list-style-type: none"> strengthen connectivity – digital, energy and transport – to support the movement of people and goods within the Thames Valley, to London, Heathrow Airport, Oxford and beyond enhance health and wellbeing by providing safe, accessible routes to the town and its unique natural surroundings, including The Chilterns and Rivers Wye and Thames 	<p>natural assets, align closely with LTP5 measures to expand active travel networks, improve public transport and support cleaner, more inclusive mobility. Together, these plans can reduce congestion, improve air quality and strengthen transport links in High Wycombe. While the delivery of transport infrastructure may result in some adverse environmental or construction impacts, the overall cumulative effect is anticipated to be positive.</p>
<p>High Wycombe Local Cycling and Walking Infrastructure Plan (2024)</p>	<p>The High Wycombe LCWIP recommends improvements to walking, cycling and wheeling routes in and around High Wycombe and identifies opportunities for new and improved links with nearby surrounding settlements.</p>	<p>LTP5 and the High Wycombe LCWIP are expected to have positive cumulative effects, as both plans focus on expanding and improving walking, cycling and wheeling routes in and around High Wycombe. The LCWIP’s recommendations for enhanced active travel corridors and new links to surrounding settlements align with LTP5 policies to deliver coherent, safe and attractive networks. Together, the plans strengthen opportunities for sustainable travel, support physical activity and improve</p>

		<p>access to key destinations in and around High Wycombe. While the delivery of new routes and infrastructure may result in some adverse environmental or construction impacts, the overall cumulative effect is anticipated to be positive.</p>
<p>West Northamptonshire Joint Health and Wellbeing Strategy 2023 – 2028</p>	<p>West Northamptonshire Health and Wellbeing Board prepared a Joint Local Health and Wellbeing Strategy. This plan sets out how West Northamptonshire Council will work together as a partnership and with residents to improve health outcomes for local people.</p>	<p>The LTP5 and the West Northamptonshire Joint Health and Wellbeing Strategy are expected to have broadly beneficial cumulative effects, as both plans seek to improve health outcomes and create healthier, more connected communities. Although the Strategy covers a neighbouring area, its focus on active lifestyles and better access to services aligns with LTP5 measures that promote active travel, reduce emissions and improve safety. Together, they can support improved cross-boundary health and wellbeing for residents who travel between the two areas.</p>

14. Monitoring

14.1 Introduction

Monitoring helps to examine the effects predicted through the SEA process against the actual effects of the policies outlined in the LTP5 when they are implemented. It is also a requirement of the SEA Regulations (The Environmental Assessment of Plans and Programmes Regulations 2004) to describe the measures envisaged concerning how significant effects of implementing the LTP5 will be monitored. Section 17 (1) notes *“the responsible authority shall monitor the significant environmental effects of the implementation of each plan or programme with the purpose of identifying unforeseen adverse effects at an early stage and being able to undertake appropriate remedial action”*. As ODPM Guidance advises, it is not necessary to monitor everything, or monitor an effect indefinitely, but rather monitoring needs to be focused on significant environmental effects.

Monitoring should therefore focus upon significant effects (adverse or beneficial) that are likely to breach international, national or local legislation, recognised guidelines or standards or that may give rise to irreversible damage, with a view to identifying trends before such damage is caused, and significant effects where there was uncertainty in the assessment and where monitoring would enable preventative or mitigation measures to be undertaken.

Monitoring can be integral to compiling baseline information for future plans and programmes (or in this instance to future iterations of the LTP or to help inform decision making in terms of the LTP5 implementation plan), as well as to preparing information which will be needed for further assessment such as EIAs, HRAs, HIAs, EqIAs etc. of projects. As such, it is the intention that this ISA monitoring will complement the monitoring and implementation plan set out in LTP5. Monitoring and evaluation of progress towards objectives and targets can form a crucial part of the feedback mechanism. Feedback from the monitoring process helps to provide more relevant information that can be used to pinpoint specific performance issues and significant effects, and ultimately lead to more informed decision-making. Note that any further assessment process such as EIA may also identify further monitoring that may be important to undertake at an appropriate time.

It is to be further noted that monitoring does not necessarily need to be undertaken by the responsible authority, rather information used in monitoring can be provided by other bodies. Indeed, due to typical budgetary or resource issues, it is often considered that the most effective monitoring programme utilises information that is already being collected, either by the responsible authority itself or by other bodies with whom information can be shared, rather than proposing the collection of new datasets.

14.2 Proposed monitoring programme

At this stage, as the LTP5 is a high-level strategic document, the following therefore outlines a potential series of monitoring indicators that will be considered and finalised alongside development of the LTP5 detailed plans and documents going forward. It is to be noted that Table 14-1 is not intended as an exhaustive list – it is likely that this list will be amended as further understanding of the LTP5 details and implementation plan is gained.

Table 14-1 – Potential Monitoring Indicators

ISA Objective	Indicators to be used	Direction of change	Suggested frequency
Protect and improve air quality	Area covered by AQMAs declared due to transport emissions	Reduce	Annual
	Concentrations of traffic derived Nitrogen Dioxide	Reduce	Annual
	Registered EVs	Increase	Annual
	Traffic volumes on key corridors	Reduce	Annual
Reduce the impact on environmental noise from transportation sources	Number and area of Noise Important Areas	Reduce	Annual
Reduce carbon emissions from transport and contribute to meeting the UK's and Buckinghamshire Council's net zero carbon targets by 2050	Carbon dioxide emissions from road transport	Reduce	Annual
	Per capita transport carbon emissions	Reduce	Annual
	Walking and cycling usage	Increase	Annual
	Number of EV chargers installed	Increase	Annual
	Number of rail passengers utilising rail stations	Increase	Annual
Maximise adaptation and resilience of the transport network to the effects of a changing climate, including through reducing the risk of flooding	Number of bus passengers	Increase	Annual
	Percentage of the local road network in good surface condition	Increase	Annual
	Number of transport schemes (new or improved) that include, as part of design, measures to adapt to climate change	Increase	Annual
Enhance biodiversity, promote ecosystem resilience and functionality and contribute to the achievement of Biodiversity Net Gain and the delivery of the Nature Recovery Network	Area of flood risk / floodplain constructed upon by transport schemes	Minimise / Reduce	Annual
	Biodiversity net gain due to transport schemes	Increase – target of minimum 10% BNG, where applicable	Annual
Protect and enhance sites designated for their international importance for nature conservation	Area of green infrastructure developed as part of transport scheme / improved public realm	Increase	Annual
	Number of transport schemes with recognised adverse effect on sites designated for nature conservation	Reduce	Annual

ISA Objective	Indicators to be used	Direction of change	Suggested frequency
purposes			
Protect, enhance and promote geodiversity	Number of transport schemes with recognised adverse effect on sites designated for geodiversity	Reduce	Annual
Protect and enhance cultural heritage assets and their settings, and the wider historic environment	Number of historic assets and historic landscapes negatively impacted by transport schemes	Reduce	Annual
Conserve and enhance the natural beauty of Buckinghamshire's protected landscapes and townscapes, protect wider landscapes, seascapes and townscapes and enhance visual amenity	Area covered by transport schemes within or in close proximity to National Landscapes (formerly AONB) designated areas	Reduce	Annual
	% area of transport schemes that incorporate improvements to public realm and sympathetic design	Increase	Annual
Protect and enhance the water environment	Number of pollution incidents attributable to transport	Reduce	Annual
Protect soil resources and avoid land contamination	Area of previously contaminated land included within or impacted by transport schemes that have been treated to remediate contamination	Increase	Annual
Promote sustainable use of resources and natural assets	Amount of waste produced during construction of transport schemes	Reduce	Annual
	Proportion of recycled / secondary material used in construction of transport schemes	Increase	Annual
Promote economic growth and job creation, and improve access and connectivity to jobs and skills for all	GDP	Increase	Annual
	Provision of digital connectivity improvements	Increase	Annual
	Transport improvements (for example service provision) in rural areas	Increase	Annual
	Average delay on local A roads	Reduce	Annual
Support the wider coordination of land use and energy planning	Proportion of developments with sustainable transport access	Increase	Annual

ISA Objective	Indicators to be used	Direction of change	Suggested frequency
across Buckinghamshire			
Improve health and well-being for all citizens and reduce inequalities in health (<i>HIA specific objective</i>)	Residents access to services within journey time	Increase	Annual
	Walking and cycling usage	Increase	Annual
	Healthy streets score	Increase	Annual
	Percentage of cycle infrastructure compliant with LTN1/20	Increase	Annual
	Walking and cycling network quantity	Increase	Annual
Promote greater equality of opportunity for all citizens, with the desired outcome of achieving a fairer society (<i>EqIA specific objective</i>)	Healthy streets score	Increase	Annual
	Accessibility and public realm improvements in most deprived areas	Increase	Annual
Promote community safety and reduce crime and fear of crime for all citizens (<i>CSA specific objective</i>)	Number of KSIs	Reduce	Annual
	Crime / anti-social incidents associated with transport network	Reduce	Annual

15. Summary and conclusions

Buckinghamshire Council have developed a new Local Transport Plan, LTP5, to reflect the ambitions, policies and plans for delivering transport improvements for all types of transport across the county up to 2045. This will be the fifth local transport plan for Buckinghamshire. The current plan (LTP4) was published in 2016 by the former Buckinghamshire County Council.

It is the intention that the LTP5 will help to connect Buckinghamshire's economy, reduce transport emissions and create high quality places. The LTP5 covers net zero progress, sustainable and active travel, minimising the impacts of car travel, and connections within and outside Buckinghamshire.

In order to assess the sustainability performance of the LTP5, an ISA has been carried out during its development. This ISA process has been thorough and comprehensive, with iterations of the LTP5 being subject to review by an experienced ISA team who are independent of the plan making team. Close liaison between the ISA team and the Plan making team (Buckinghamshire Council) has taken place throughout this process. It is considered that this approach resulted in an enhanced and more robust incorporation of sustainability considerations to the LTP, in terms of policy approach but also particularly in terms of clarity of actions to be taken as any intervention derived from the LTP5 will be developed.

Based on the findings of the ISA, it is possible to draw a number of key conclusions with regards to the LTP5 and its implications for sustainability.

In the first instance, it was found that implementing the LTP5, in comparison to continuing under the present approach to planning and investment as per LTP4 and to a Decarbonisation Fast Track approach, provides a favoured approach. Both the LTP5 and the Decarbonisation Fast Track approaches showed stronger alignment than continuing under the present approach due to their alignment with current policy and alignment with ISA objectives. While the Decarbonisation Fast Track approach offers strong environmental benefits, it faces practical and financial constraints, particularly in a largely rural county. In contrast, the LTP5 provides a more pragmatic solution that aligns with the context of Buckinghamshire and addresses its specific challenges.

The proposed approach under LTP5, set out by its Vision and related Objectives, was also shown to provide a generally firm underpinning to help ensure that the sustainability performance of the plan could be maximised. Key elements of the three LTP5 objectives were shown to potentially develop an approach to the LTP5 that will consider economic development and enable access and overcome inequality, protect the environment, tackle issues relating to a changing climate and help to achieve better health outcomes by encouraging active and sustainable travel. These elements were considered to be in line

with the general approach to sustainability that should aim for beneficial effects in respect of economy, environment and society.

The ISA then examined each of the following LTP5 policy themes in turn:

1. Active Travel
2. Public Transport
3. Safety
4. Place-shaping
5. Highway Network
6. Motor Vehicles
7. Innovation
8. Freight and logistics
9. Delivery

There are 31 policies grouped under the nine policy themes. The policies set out the principles which will guide how the vision and objectives for transport in Buckinghamshire will be delivered and set the framework for the LTP5 interventions. A consistent theme across Buckinghamshire's LTP5 policy themes is the ambition to support a substantial shift towards more sustainable travel, with policies designed to encourage increased use of public transport, walking, wheeling and cycling. Alongside this, the policies place strong emphasis on ensuring that the transport network operates efficiently. While the focus is on sustainable modes and increased transport efficiency, the LTP5 does recognise that this may not be suitable for all and as such, there are elements of the LTP5 which still provide mechanisms for more efficient use of private vehicles.

The ISA found that the LTP5 performs strongly in a number of areas in sustainability terms. Of particular note are the areas of addressing air pollution, noise and reducing carbon emissions. Overall, it is considered that the LTP5, through encouraging a shift to more sustainable and active transport modes, will be beneficial in respect of reducing air pollution and carbon emissions. It is also likely that noise, associated with the transport network will reduce through reduced volumes of traffic and congestion, as well as increased uptake of EVs.

The LTP5 also performs strongly in terms of the sustainable use of resources and natural assets. A shift to public transport and active travel is expected to reduce reliance on private vehicles, which can decrease the consumption of fossil fuels and other non-renewable resources and reduce the need for new infrastructure.

The LTP5 is also considered to be particularly beneficial in terms of economic growth and access to jobs, with policies that promote sustainable and active travel to workplaces and schools, strengthen connectivity, and support efficient movement of goods.

It is anticipated that the LTP5 will support the wider coordination of land use and energy planning across Buckinghamshire through alignment with current local plans such as Buckinghamshire BSIP, and measures including strategic road improvements, highway network management and supporting the development of EV charging networks.

In relation to health, equalities and community safety, it is anticipated that the LTP5 will also bring significant benefits. Health and wellbeing will be improved as the LTP5 promotes more active and sustainable travel, reduces exposure to air pollution and noise, and creates safer, more accessible environments for all users.

It is anticipated that the improvements will have a beneficial effect on equality of opportunity by reducing transport-related inequality and providing more inclusive, accessible and affordable travel options for all. However, it is also the case that there are aspects of the LTP5 which not all groups may be able to take full advantage of. For example, an emphasis on active travel may not work well for the elderly, those with certain health conditions, those with young children and so on. The distances in rural areas may mean that active travel routes would be more likely to be used for recreation, rather than the full connectivity they can bring. Similarly, an emphasis on innovative transport technologies may not work well for all groups due to cost, access to technology etc. The LTP5 recognises these challenges. For example, provision is still made for improving the network for the use of private vehicles – the elderly, or those in rural areas may still need to rely on this mode for some journeys.

Community safety is likely to be improved through measures to create safer streets, reduce traffic-related risks and enhance the overall quality of public spaces.

It is inherent in the nature of the LTP5 that it will result in a series of transport infrastructure interventions, which in some cases may require heavy civil engineering works across large areas, though it is recognised that for the most part this will be in limited areas to address specific issues such as congestion hotspots or providing connections to new developments. Nevertheless, it is in the nature of these works that there will be environmental implications. For example, new infrastructure such as roads (or road widening and junction improvements), as well as mobility hubs and parking could involve a direct loss of habitat, or soils. There could also be an adverse effect on the water environment through pollution incidents during construction, or through polluted runoff during operation, and would also result in a new feature in the landscape. Increased disturbance could have adverse effects, for example, in terms of noise or the setting of heritage assets. Nevertheless, overall, it is considered that the LTP5 will bring a range of beneficial effects to the environment and people of Buckinghamshire.

Where it was considered that performance could be improved, a series of recommendations were made to strengthen the policy wording in order to address those areas identified as

adverse or to accentuate those areas of the LTP5 which have been identified as being beneficial to sustainability.

Buckinghamshire Council have committed to working with partner organisations, including engagement with the statutory bodies of Environment Agency, Natural England and Historic England; undertaking Environmental Impact Assessment, Habitats Regulation Assessment, Health Impact Assessment and Equalities Impact Assessment, as well as the development of Construction Environmental Management Plans. There are also a series of more specific actions to increase resilience in the transport network and address specific environmental, health or equality related issues.

It is also the case that a series of mitigation measures for different intervention types have been identified through this ISA. At a strategic level, this included refining the LTP5 itself, refining aspects of the interventions and noting specific mitigation, ensuring adherence to technical measures, addressing the need for further assessment, working with partner organisations, as well as contingency arrangements for dealing with possible adverse effects.

It is recognised that the LTP5 will not act or be delivered in isolation and will influence and be influenced by other Plans and Policies or developments across and beyond Buckinghamshire. It is anticipated that the LTP5 will act to benefit those other Plans and Policies, though there is a potential for some adverse effects. Nevertheless, it is considered that the LTP5 sets out an approach to further assessment that will address any cumulative effects arising.

It is important that Buckinghamshire Council understand the effect of the implementation of their LTP5 and the ISA set out a potential series of monitoring indicators that will be considered and finalised alongside development of the Implementation Plan. These will also complement those KPIs and monitoring indicators which Buckinghamshire Council have identified in the LTP5 for measurement. It is the intention that monitoring will cover social, environmental and economic effects and it will involve measuring indicators that will enable the establishment of a causal link between the implementation of the LTP5 and the likely effects (both positive and negative) being monitored. This will be of particular benefit to those involved with the next iteration of the LTP and if required, will allow early remediation to be undertaken of any identified adverse effects.

Overall, it is considered that the LTP5 represents a well-balanced approach in terms of sustainability performance across the full range of potential key effects delineated in the ISA Framework. It is anticipated that this should help ensure that the vision for Buckinghamshire can be achieved in a sustainable and integrated fashion.