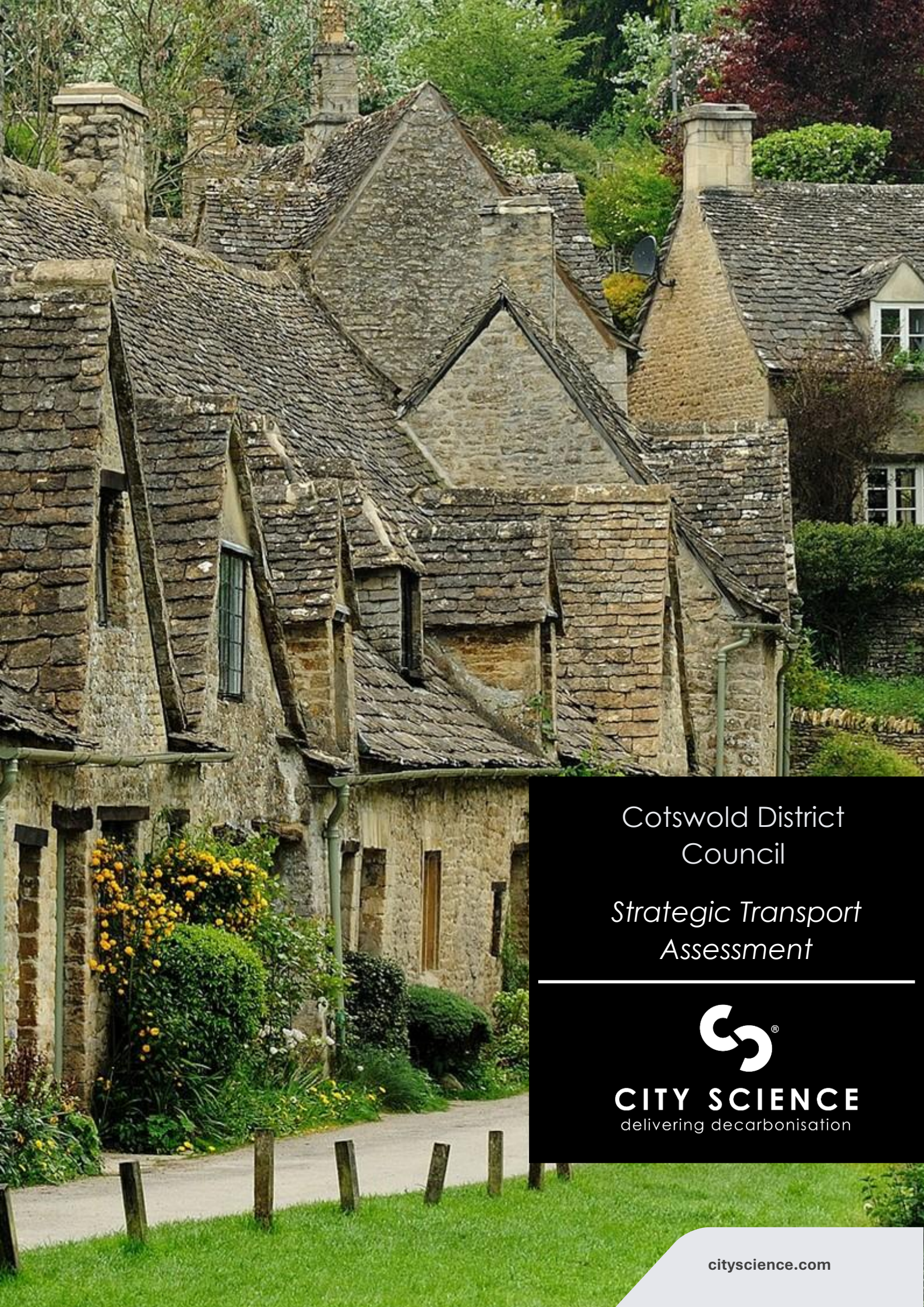

Cotswold District Council

Strategic Transport Assessment

CITY SCIENCE
delivering decarbonisation

cityscience.com

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Contents

Executive Summary

City Science has worked with Cotswold District Council to provide a transport evidence base as part of its draft local plan. This Strategic Transport Assessment forms a central part of the transport evidence base designed to fulfil its legal and procedural requirements..

Vision and Validate Approach

Under the new NPPF framework this work has adopted a vision and validate approach. This is designed to set a direction for the Local Plan and then work to deliver the necessary change to deliver it. This sits in contrast with previous approaches which have tended to focus on managing and mitigating any impacts.

Our approach has been designed to prioritise sustainable travel measures in line with the vision at every stage. Initial interventions and measures were designed wholly to meet and further the objectives and where residual mitigations have been required it is expected that they still deliver improvement for the vision.

The measures identified in this document provide for a substantive improvement to active and public transport networks for new developments that will also have positive impacts for all residents of the district. They have been robustly studied and tested to ensure that, cumulatively, they provide a comprehensive and viable route to achieving the vision and objectives alongside ensuring no adverse severe harms.

Local Plan Impacts

The Local Plan sets out to deliver 18,859 new homes and 79.68 new hectares of employment. This leads to an additional 157,600 trips within the district. The evidence suggests that sites with the sustainable measures are able to deliver key outcomes that outperform equivalent areas (e.g. on sustainable mode share) whilst also avoiding adverse harm to the network through key necessary changes to the network.

Conclusions

This STA provides a robust, comprehensive, and legally compliant evidence base. It confirms that the transport implications of the spatial strategy have been fully evaluated and appropriately mitigated and integrated whilst ensuring that the direction of travel is to fulfil the vision and objectives.

1. Introduction & Background

1.1 Purpose of this document

This Strategic Transport Assessment is one of several documents which provide evidence that the draft Cotswold District Local Plan has been prepared in accordance with legal and procedural requirements and is sound with regard to transport matters[1].

Specifically, this document demonstrates that the transport policies and measures set out in the Local Plan:

- meet Cotswold District's objectively assessed housing needs;
- were prepared in cooperation and liaison with neighbouring planning and transport authorities, and with Gloucestershire County Council and National Highways as highway authorities;
- represent a strategy which is appropriate and based on consideration of reasonable alternatives;
- are deliverable either directly by Cotswold District Council (CDC) or through joint working with neighbouring authorities, the highway authorities and/or other stakeholders;
- are consistent with national policy, particularly the principles of the National Planning Policy Framework (NPPF), including adopting a 'vision-led' approach intended to maximise the sustainability of new developments; and
- are aligned with strategic policies in the area including the emerging Gloucestershire Local Transport Plan 5.

This document has been prepared prior to the Regulation 19 public consultation on the draft Local Plan prior to planned submission for independent public examination in December 2026.

1.2 Background

CDC commenced a review of its adopted Local Plan (2011-2031) in 2020, with an initial Regulation 18 Issues and Options consultation in 2022. The purpose of this review was to ensure the plan remained up to date and responsive to national planning policy changes, while also strengthening its approach to environmental sustainability through a "green to the core" agenda. This initial stage sought views on the key issues that the emerging plan needed to address, including climate change, biodiversity, sustainable development and the overall effectiveness of existing policies. A further Regulation 18 consultation followed in 2024. This included both draft policy updates for the partial Local Plan review and an Issues and Options consultation for a separate Development Strategy and Site Allocations Plan. This considered how growth beyond 2031 might be accommodated across the district.

In December 2024, the Government published a revised National Planning Policy Framework consultation, which introduced a new Standard Method for assessing local housing need. This resulted in a substantial increase in Cotswold District's housing

[1] As set out in Paragraph 36 of the National Planning Policy Guidance (December 2024)

requirement to approximately 1,036 dwellings per year. In response, the Council committed to a full review of the Local Plan.

In July 2025, the Council resolved to consolidate the two ongoing Local Plan projects:

- the partial update of the adopted Cotswold District Local Plan (2011-2031);
- and the Development Strategy and Site Allocations Plan,

into a single comprehensive Full Local Plan Update, with a view to submission in 2026 and adoption in 2027.

Following this decision, the Council progressed a further Regulation 18 consultation on Preferred Spatial Options, informed by an evidence base including a Broad Locations Study and a Settlement Role and Function Study, alongside a further Call for Sites exercise. These studies assess environmental constraints, infrastructure capacity, settlement sustainability and potential growth locations. The Council has now refined its preferred spatial strategy and preparing for the next stage for the plan process; a Regulation 19 Draft Local Plan and subsequent submission for examination.

1.3 The transport evidence base

This transport evidence base forms a key component of the supporting evidence underpinning the Local Plan. It tests the deliverability of the proposed strategy, assesses the impact of planned growth on the highway network and sustainable transport systems, and identifies any necessary mitigation and infrastructure improvements.

The December 2024 NPPF update put an increased focus on Local Plans being developed using a 'Vision & Validate' approach, as opposed to the previous 'Predict & Provide' approach.

As a result, in September 2025 the Council appointed City Science to deliver the transport evidence base required for a compliant and effective Local Plan. This evidence base is intended to meet the tests of soundness and enable Regulation 19 consultation by summer 2026. The evidence is presented in this Strategic Transport Assessment.

1.4 Involvement of stakeholders & Duty to Cooperate

The Duty to Cooperate was established under the Localism Act 2011 and requires local planning authorities to work together in a proactive and constructive way on strategic cross-boundary issues, thereby strengthening the preparation of Local Plans. It ensures that key matters such as transport are considered jointly by neighbouring authorities and relevant statutory bodies. This transport evidence base has been developed in coordination with Gloucestershire County Council, in its role as the highway authority.

Whilst the Duty as a legal test is unlikely to apply when the plan is examined, CDC, through City Science, has regularly engaged with key partners on transport matters. This includes National Highways, Gloucestershire County Council, Gloucester City Council, Cheltenham Borough Council and Tewkesbury Borough Council as Strategic Local Plan (SLP), Worcestershire County Council, Oxfordshire County Council, Warwickshire County Council, Swindon Borough Council, Wiltshire County Council, Network Rail, and the Environment Agency.

2. Our vision-led approach

2.1 Introduction

This chapter firstly describes our 'vision & validate' approach for determining the transport measures required to support the Preferred Spatial Option. The chapter sets out the aspiration (i.e. 'the vision') for travel related to the Preferred Spatial Option, which has a strong focus on sustainability. Objectives and sub-objectives of this vision are also described along with the Key Performance Indicators (KPIs) which can be used to monitor the delivery of the vision going forward. The vision is cross-referenced against the existing policy context to ensure alignment.

2.2 The 'Vision & Validate' approach

2.2.1 Overview: What is Vision & Validate?

The transport evidence base for CDC applies a 'Vision & Validate' methodology to establish a robust, future-focused foundation for planning decisions. This approach is centred around defining the transport outcomes the district seeks to achieve and identifying the policies, infrastructure, and behaviours required to deliver them. This follows a recent shift away from the previous 'Predict & Provide' approach following the December 2024 revision of the National Planning Policy Framework. Where 'Predict & Provide' relied on projecting future travel demand from historic data and providing capacity to accommodate it, 'Vision & Validate' shifts away from reactive forecasting to proactive outcome-led planning. The method involves three key steps:

- **A Long-term, Place-based Vision:** The process begins by establishing a clear vision for the future, grounded in the objectives of the CDC Local Plan and informed by national, regional, and local priorities. This vision reflects the type of places the CDC Local Plan wants to create (e.g. walkable, connected, low-carbon communities) and sets clear ambitions for mode shift, accessibility, and climate mitigation and resilience.
- **Defining Infrastructure, Policies & Behaviours**: Rather than extrapolating past trends, Vision & Validate works back from the desired outcomes by considering the infrastructure, services, and behaviours that need to be in place to realise this vision. This allows planning to focus on the enablers of desired change and ensuring that spatial growth is aligned with transport opportunities.
- **Validated through Scenario Testing & Engagement**: Once the vision is defined, a series of transport scenarios are tested to understand the range of ways in which the outcomes could be delivered. A preferred package of interventions is then selected, informed by these tests and other planning considerations. The preferred approach is then validated against a multi-criteria assessment framework (using KPIs representing the objectives), modelling evidence, stakeholder input, and deliverability criteria, ensuring it is both ambitious and achievable.
- **Avoiding Substantive Harm:** A vision and validate approach must still avoid any substantive residual harm to the highway network. Residual mitigations may be needed in addition to vision-based interventions in order to ensure this.

Importantly, further validation of this vision-led approach can be achieved through planned performance monitoring to measure progress towards the vision (e.g. through the share of

journeys by sustainable modes). Where progress is not as planned, potential risks can be identified, and mitigated, and consideration is given to why this is the case and how progress can be improved.

Where progress is better than expected, examination of why this is the case can inform future delivery, by understanding what has worked well, and consideration of a more ambitious vision. In this context, consideration should be given to the potential for reduced car travel resulting from the design of new developments to increase the viability of further investment in active travel and public transport. This 'virtuous circle' of changing travel behaviour and investment has been recognised by organisations such as the CIHT and the Transport Planning Society (Hopkinson L, 2025).

2.2.2 Rationale: Why Vision & Validate?

Traditional transport planning has often relied on a 'Predict and Provide' approach - forecasting future travel demand based on historic trends and planning infrastructure around anticipated volumes. While this can be useful for short-term operational management, it risks encouraging car dependency, underinvesting in sustainable modes, and failing to account for changing behaviours, policy shifts, or new technologies.

By contrast, the Vision & Validate approach has several benefits for plan making, as shown in Figure 2-1.

Figure 2-1: Benefits of the Vision & Validate approach

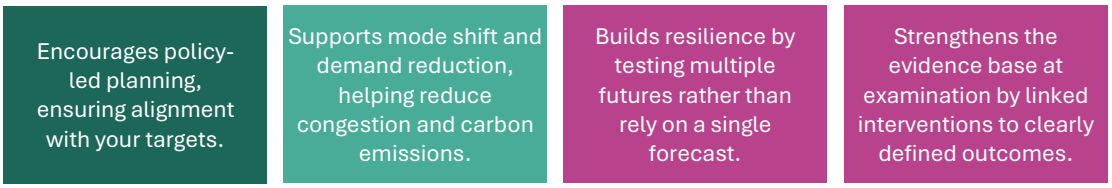
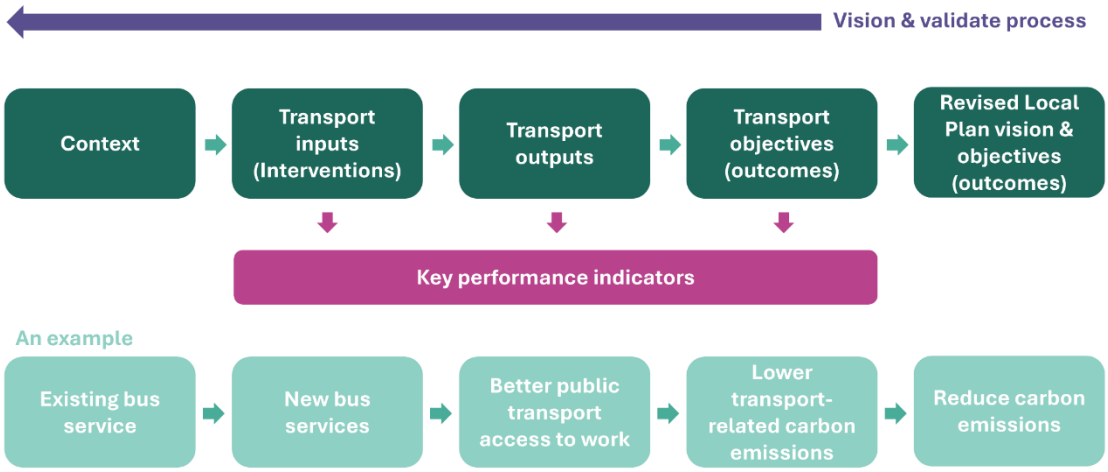


Figure 2-2 demonstrates how logic mapping can clarify these linkages, providing an illustrative example. The 'logic map' is read from left to right but developed from right to left, consistent with the Vision & Validate approach.

Figure 2-2: Tavistock Institute approach to logic mapping



2.2.3 Applying the Vision & Validate Approach

The Vision & Validate approach has been embedded throughout the preparation of the Local Plan and supporting transport evidence. Rather than forecasting future travel demand based solely on past trends, the process has started with the outcomes sought by the Council and its partners, as articulated through the transport vision and objectives. Transport interventions and development strategies have then been tested to determine the extent to which they can support delivery of these outcomes.

A preferred spatial option (PSO) was created with the sites for development that would be taken forward. A two stage approach was designed: Intervention and Mitigation.

- **Intervention:** Interventions were measures that were designed to deliver the vision and objectives for the local plan. This was informed both from modelling (e.g. on likely demand corridors with the most impact for active travel) and through good practice urban design (e.g. ensuring active travel corridors to key services in line with guidance). This testing process was used to validate whether proposed growth and associated transport measures could contribute to achieving the desired transport vision.
- **Mitigation:** Where potential issues were identified, mitigation measures were then considered and the PSO was re-assessed to determine the extent to which impacts could be reduced or appropriately managed. This iterative process ensured that the spatial strategy was refined in response to evidence, rather than assumptions, and that any harmful effects were addressed where possible. These mitigations are still expected to prioritise the vision as much as possible. For example, junction capacity increases should be designed to also deliver active travel segregation and/or public transport priority.

This Vision & Validate approach has therefore ensured that sustainable measures in line with the vision have been prioritised throughout. By focusing on desired outcomes from the outset and using evidence to test and refine proposals, the approach provides a more robust framework for achieving the Council's long-term transport ambitions.

2.3 Encouraging sustainable travel

Cotswold District Council has demonstrated a strong commitment to sustainable travel and net zero through a series of formal actions and adopted targets. In July 2019, the Council declared a climate emergency and committed to achieving net zero carbon emissions from its own activities as soon as possible, with an 80% reduction against a 1990 baseline by 2030 and full decarbonisation by 2045, alongside achieving 100% clean energy use by 2030. These commitments are supported by the appointment of a Climate Emergency Manager, the establishment of a Climate Change Panel, and the adoption of a Climate Emergency Strategy for 2020–2030, embedding climate considerations across decision-making and reporting.

These commitments are further reflected in the Council’s approach to plan-making, including the review of the Local Plan to ensure it is “green to the core” and the integration of climate and sustainability objectives throughout its policies, including those relating to transport and development.

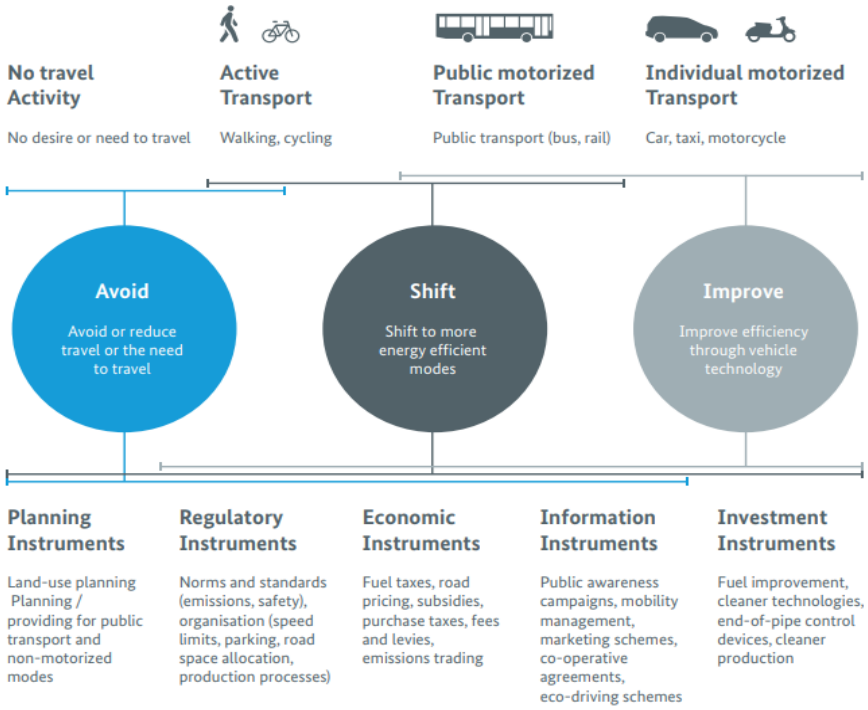
The NPPF recommends use of the vision-led approach in plan-making to identify "transport solutions that deliver well-designed, sustainable and popular places." The Council is fully committed to delivering these outcomes through the Local Plan process.

In terms of sustainable travel specifically, this has been achieved through adoption of a key principle, informing all stages of decision-making. This is the 'avoid/shift/improve' ('ASI') framework, first applied in Europe in the 1990s but since widely applied in the UK. ASI focuses on the needs of people, rather than car infrastructure, and on the demand for travel rather than the supply of infrastructure. It seeks to create more liveable places, reduce production of greenhouse gases and congestion and improve energy efficiency.

The ASI framework sequentially prioritises:

- Those measures which AVOID the need to travel (either negating the need for some journeys altogether or reducing the length of journeys) through measures such as transit-orientated development and compact multi-use development.
- SHIFT as many of the remaining journeys onto the most sustainable and energy efficient modes of travel: public transport, wheeling and walking.
- Minimising the impact of residual vehicle trips by IMPROVING their sustainability. This includes promotion of electric vehicles and energy efficiency in the provision of public transport.

Figure 2-3: Avoid/Shift/Improve instruments



Source: New Urban Agenda #114[2]

[2] https://www.transformative-mobility.org/wp-content/uploads/2023/03/ASI_TUMI_SUTP_iNUA_No-9_April-2019-Mykme0.pdf

As such, this STA proposes measures and policies which, for example, enable shorter journeys and digital rather than physical accessibility, over those which encourage public transport use and over those which support use of private cars.

2.4 The transport vision

The transport vision and objectives set the basis for decision-making and ensure that those decisions link back to best practice, adopted policy and emerging priorities. Transport is not an end, but an enabler of wider societal benefits such as health and wellbeing, and placemaking. The transport vision provides a simple statement of what is being sought through the Local Plan and is consistent with the broader vision for the Local Plan as a whole.

The transport vision for the Local Plan is shown in Figure 2-4.

Figure 2-4: Transport vision for the Local Plan

The 'what': Residents in developments within the Cotswold District will have access to high quality sustainable low-carbon transport with low car dependency. Developments will prioritise active travel and public transport as we transition to net zero carbon.

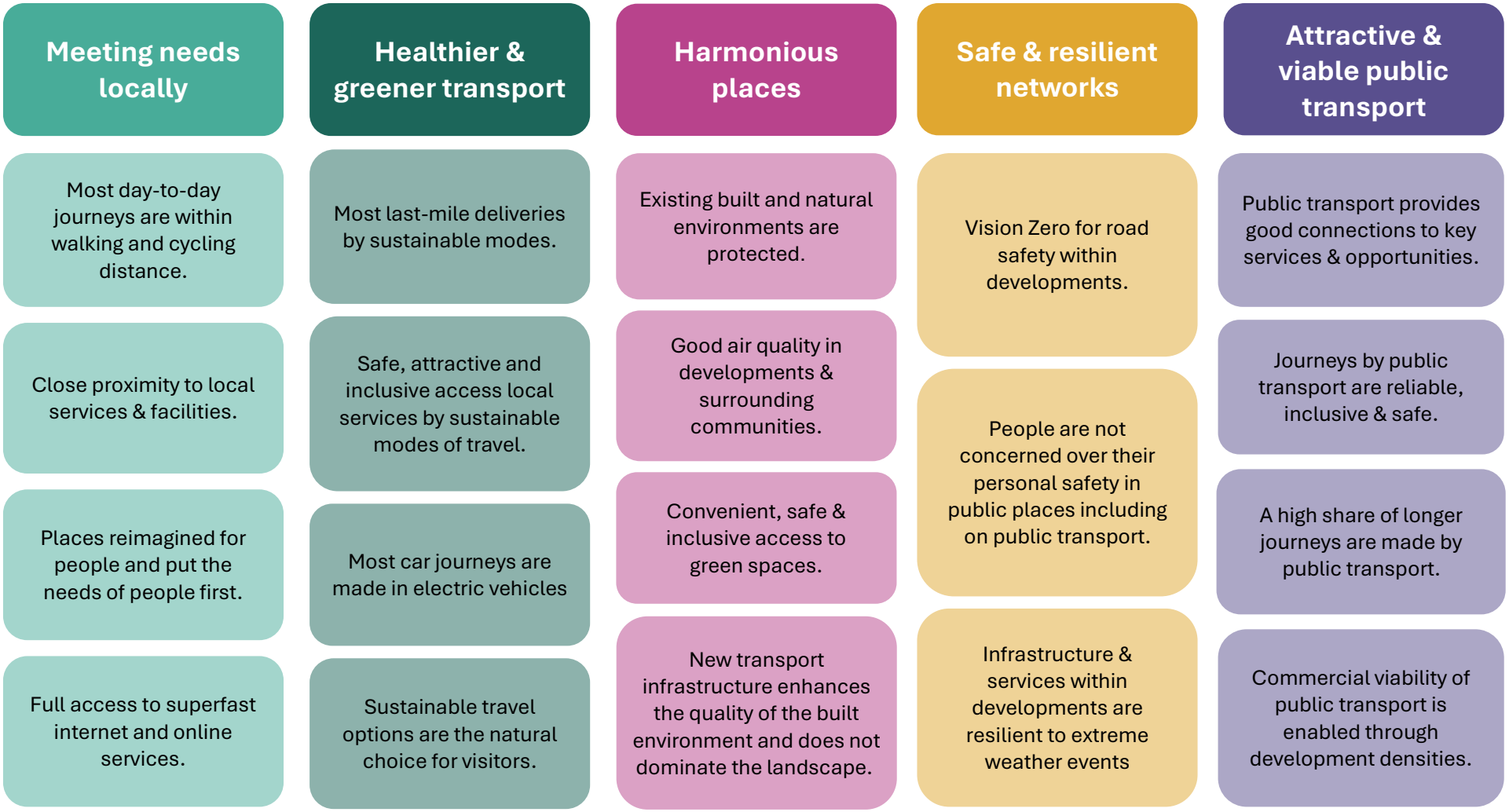
The 'so-what': Residents will be well connected to their everyday needs with options that enable low-carbon travel choices for all to reduce emissions, boost health and wellbeing, supporting local people and the environment to thrive."

2.5 The transport objectives

While the transport vision outlines the Council's long-term aspirations for the transport network, the objectives define the specific ways in which transport will help realise that vision. They draw on the existing Regulation 18 Local Plan objectives, that have shaped the development of policies and interventions in the plan preparation process. The objectives were refined collaboratively with key stakeholders, including Gloucestershire County Council, National Highways, and other partners, through a programme of targeted workshops and stakeholder discussions.

The transport objectives are shown in Figure 2-5. They are intentionally aspirational, providing a more detailed expression of the transport vision and the outcomes it seeks to achieve. However, it is acknowledged that full delivery of every objective may not be achievable within the Plan period, particularly where progress is dependent on external factors or agencies beyond the Council's direct influence. Consequently, any proposals, decisions, or actions that could hinder advancement towards these objectives should be carefully assessed and justified.

Figure 2-5: Transport Objectives and Sub Objectives



2.5.1 Objective 1: Meeting needs locally

Meeting needs locally means ensuring that people can access day-to-day services, such as a local shop, primary education and leisure opportunities within their own communities. Travel demand is largely 'derived', arising from where homes, workplaces, schools, shops, and leisure facilities are located. By providing opportunities to meet these needs locally, fewer and shorter trips are required which are more likely to be made walking, cycling and through using public transport (DfT, 2025). This mode shift reduces emissions from road transport, while encouraging more active and healthy lifestyles.

Ensuring needs are met locally is key for achieving the wider Local Plan objective. It reduces the need to travel by car, helping to cut carbon emissions from transport. It also reduces pressure for new road infrastructure, protecting the Cotswolds' natural, built and historic environment. It also enables a vibrant, low-carbon local economy by concentrating economic activity within towns and villages, promoting self-sustaining communities.

The types of policies and measures that could support this objective include:

- Building mixed-use developments that combine residential, commercial, and community uses;
- Situating new developments near existing services and employment opportunities;
- Maintaining or enhancing access to essential services within walking or cycling distance from new developments;
- Promoting remote access to services and ensuring developments accommodate remote working; and
- Designing streets for safe and convenient walking and cycling.

2.5.2 Objective 2: Healthier & greener transport

Healthier and greener transport means promoting travel options that minimise environmental impacts, improve air quality, and support active lifestyles. This includes encouraging walking, cycling, and the use of public transport for most everyday journeys. Where these options are not feasible, it prioritises ensuring that most motorised vehicle miles are undertaken by electric or other zero-emission vehicles.

Transport accounts for 44% of greenhouse gas emissions in the Cotswold District (DESNZ, 2023). Encouraging greener travel helps reduce transport emissions, improves air quality and support safer, more liveable streets. Healthier travel delivers physical and mental health benefits, increasing social interaction, and reducing traffic-related injuries. Low-emissions technologies, such as EVs, produce less negative health externalities (e.g. due to emissions) and when integrated with active travel infrastructure ensure healthier outcomes.

Healthier and greener transport is necessary to meet the wider objectives for the Local Plan, reducing carbon emissions from road transport and supports the transition to a low-carbon transport system. Promoting active and sustainable travel also supports inclusive, healthy communities by improving access to jobs, services and facilities, while creating safe, accessible and connected neighbourhoods.

The types of policies and measures that could support this objective include:

- Dedicated walking and cycling routes, cycle parking, and pedestrian-friendly streets;
- EV charging networks, incentives for electric vehicles, and low-emission zones;

- Reduced speed limits, establishing shared streets, and pedestrian priority areas;
- Integration of green corridors, trees, and shading along walking and cycling routes;
- Public awareness campaigns to promote active travel and low-emission modes; and
- Transitioning public transport and municipal fleets to low-emission vehicles.

2.5.3 Objective 3: Harmonious places

Harmonious places are designed to integrate transport and public spaces in a way that complements the natural, built, and historic environment while creating safe, attractive, and functional streets and public realms. They combine transport networks, streetscapes, and public spaces in ways that respect local character, enhance the quality of life for residents, and promote sustainable travel modes such as walking, cycling, and public transport.

The development of harmonious places ensures that transport networks enhance sustainability, connectivity, and community resilience. This can be achieved through measures such as sensitively designed streets and public spaces, careful landscaping, traffic calming, prioritising active and sustainable travel modes, and integrating transport improvements with heritage and natural conservation. This enables communities to become safer, more inclusive, and healthier.

Creating harmonious places is key to achieving the Local Plan objectives by ensuring that the natural, built, and historic environment is conserved and enhanced. This includes protecting heritage assets, landscapes, and biodiversity while integrating necessary transport infrastructure and supporting resilient communities that can adapt to climate change.

The types of policies and measures that could support this objective include:

- Streets and public spaces designed to reflect local heritage and character;
- Reducing vehicle dominance to create safer, more attractive environments;
- Walking and cycling routes are prioritised and integrated into public spaces;
- Improving lighting, seating, public art, and landscaping to enhance attractiveness of public spaces; and
- Engaging communities in designing streets and public spaces to ensure they are inclusive.

2.5.4 Objective 4: Safe & resilient places

Safe and resilient multi-modal networks are integrated transport systems that allow people to travel safely and efficiently using a variety of modes, including walking, cycling, public transport, and private vehicles. These networks should be designed in accordance with relevant transport, accessibility and safety standards, ensuring that infrastructure is inclusive, well-maintained, and suitable for people of all ages and abilities.

The design and management of multi-modal networks should align with Vision Zero principles, which seek to eliminate deaths and serious injuries on the transport network by prioritising safe system design and reducing risks. By embedding safety in transport planning, concerns over personal safety should not be a barrier to people choosing sustainable transport.

Resilient networks can withstand extreme weather events, infrastructure failures, or other disruptions, ensuing reliable connections and continued access to essential services. By integrating multiple modes and ensuring safe access, residents are more likely to use walking, cycling, or public transport, reducing reliance on private cars and cutting carbon emissions. Safety-focused design prevents accidents and injuries, making streets and transport corridors more inclusive and usable for people of all ages and abilities.

Safe and resilient multi-modal networks support wider Local Plan objectives by responding to the climate crisis through adaptation. Well-designed, resilient networks reduce vulnerability to climate risks, ensuring reliable access to essential services. By providing reliable connections to employment, education, retail, and leisure, multi-modal networks enable a vibrant, low-carbon local economy, supporting local businesses and reducing travel-related barriers to economic activity.

The types of policies and measures that could support this objective include:

- Ensuring transport infrastructure is designed to withstand flooding, heat, and extreme weather;
- Coordinated walking, cycling, public transport, and car networks;
- Regular inspection and maintenance to ensure reliability and safety; and
- Contingency routes and accessibility plans for essential services.

2.5.5 Objective 5: Attractive & viable public transport

Providing attractive and viable public transport choices means ensuring that buses, trains, and other shared transport services are frequent, reliable, affordable, and accessible for all residents. High quality transport provides public transport provides a practical alternative to private car travel for commuting, education, shopping, and leisure trips, helping reduce car dependency, transport emissions and congestion.

Accessible, inclusive, and reliable public transport ensures that all residents, including those without a car, older people, and people with disabilities, can participate fully in work, education, and community life. Integrating public transport with active travel, journeys become more convenient and more attractive.

This supports the Local Plan objectives by helping to address the climate crisis, enabling a low-carbon local economy, improving access to services and supporting sustainable, connected communities. A resilient public transport network also provides greater travel choice and adaptability to future challenges.

The types of policies and measures that could support this objective include:

- High quality, high frequency and reliable public transport services;
- Improved bus infrastructure such as dedicated bus lanes and traffic signal priority to improve reliability of services;
- Step-free access, seating, shelters, and real-time information for all users;
- Development of transport hubs linking public transport and active travel and increasing multi-modal travel; and
- Simplified multi-modal ticketing and fare structures.

2.6 Key performance indicators (KPIs) and targets

2.6.1 Key performance indicators

During the plan-making process, key performance indicators (KPIs) were developed to support the objectives. The KPIs serve the following purposes:

- They provide additional detail in terms of 'success factors' in terms of sustainable development (from a transport perspective). This draws on guidance and best practice such as the National Planning Policy Framework, National Planning Guidelines, Active Travel England design resources and best practice from other Local Plans.
- They highlight that some measures of success are inputs into the Vision & Validate approach and that this is worthy of proper consideration. This is typically where an input defines the behavioural outcome sought, for example vehicle trip rates. Testing different assumptions about such inputs is an important part of the vision and validate approach.
- They are the source of the criteria used to compare the potential impacts of the Preferred Spatial Option, and the effects of any transport interventions proposed (as part of the Multi-Criteria Assessment Framework).
- They identify the transport outputs that the package of Local Plan transport policies, interventions and services could deliver.
- They can be used as the basis for development of travel behaviour monitoring and evaluation programmes for individual Local Plan sites (or groups of sites). This would aid understanding of whether the transport vision is likely to be met ('validation') and, if not, to inform decisions about the need for further intervention.

Typically, two KPIs were identified for each transport sub-objective/overarching objective. Table 2-1**Error! Reference source not found.** provides a summary by showing the success factors for each sub-objective.

Table 2-1: Success factors by sub-objective

Success indicator
Objective 1: Meeting needs locally
Developments include (or are close to) local services, shops and local work hubs.
Development is designed to prioritise people over vehicles.
Superfast broadband is provided to all properties during construction. 100% 5G coverage in new developments.
Objective 2: Healthier and greener transport
New developments are located in close proximity to existing active travel networks, enabling and encouraging walking and cycling from the outset.
Cycle parking and supporting facilities are integrated as standard within new commercial developments.
High-quality pedestrian and cycle routes are delivered in and around developments, designed to be safe, direct, well-lit, and attractive for users.
New development contributes to a net reduction in transport-related emissions, particularly from road traffic.
Electric vehicle charging infrastructure is provided to support the transition to electric mobility.

Success indicator
Local communities and urban centres support sustainable freight and servicing solutions, including e-cargo bike deliveries and dynamic kerbside management.
Objective 3: Harmonious places
Direct active travel routes are provided to local green and blue spaces.
Existing built and natural environments are protected from transport impacts of developments.
Air quality is improved across the district, with particularly high standards expected within new developments and their immediate surroundings.
New transport infrastructure enhances, rather than detracts from, the character of places.
Objective 4: Safe & resilient networks
Road safety improves in line with Vision Zero principles within new developments.
Adherence to relevant standards, guidance best practice within and beyond sites.
Concerns over personal safety are not a barrier to active travel.
Transport infrastructure is resilient to climate change and extreme weather events.
Transport system is not reliant on a small number of modes, junctions and links to function
Objective 5: Attractive & viable public transport
Development sites are located close to existing or planned public transport services.
Developments are well-served by direct and frequent public transport to employment and service locations.
Accessible and attractive active travel routes to public transport services.
Higher-density areas within developments close to core sustainable transport corridors.

3. Current transport & travel conditions

3.1 Introduction

This chapter sets out the existing transport baseline for the Cotswold district. It presents the current transport infrastructure and networks, assesses existing operating conditions, describes travel demand and movement characteristics, and identifies principal transport matters that require further consideration within the Sustainable Transport Assessment.

3.2 Current transport networks

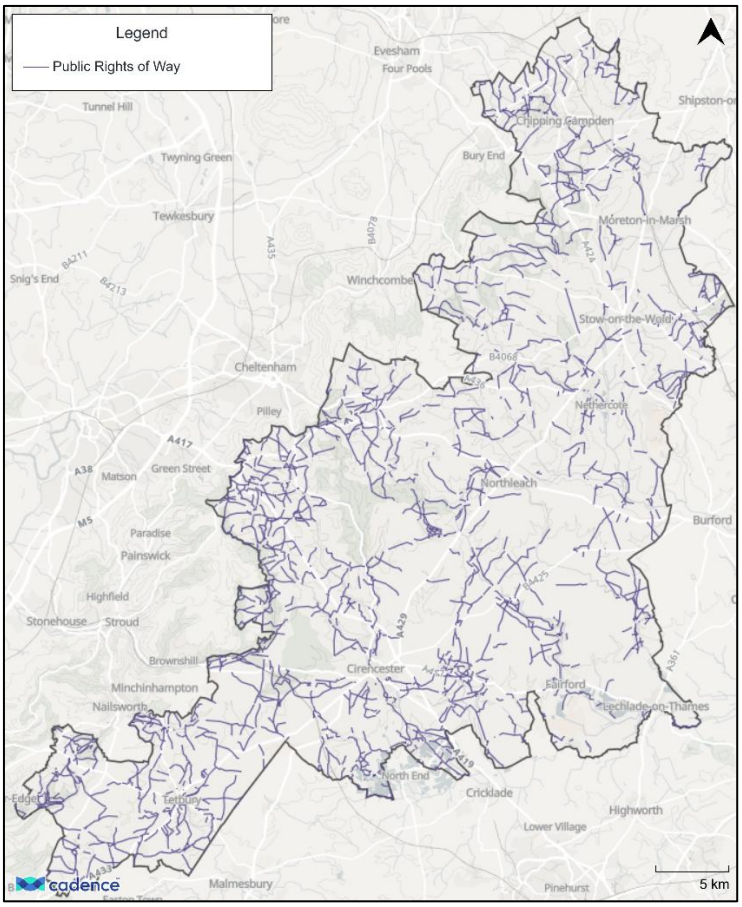
3.2.1 Active travel

3.2.1.1 Walking and wheeling

The ability to walk, wheel and access local destinations safely is an important indicator of transport accessibility and community connectivity. Within the Cotswold District, active travel is influenced by the area's rural geography, dispersed settlements and historic built environment. While many towns and villages benefit from attractive walking environments and an extensive network of Public Rights of Way (PROW), the quality, directness and accessibility of routes can vary considerably.

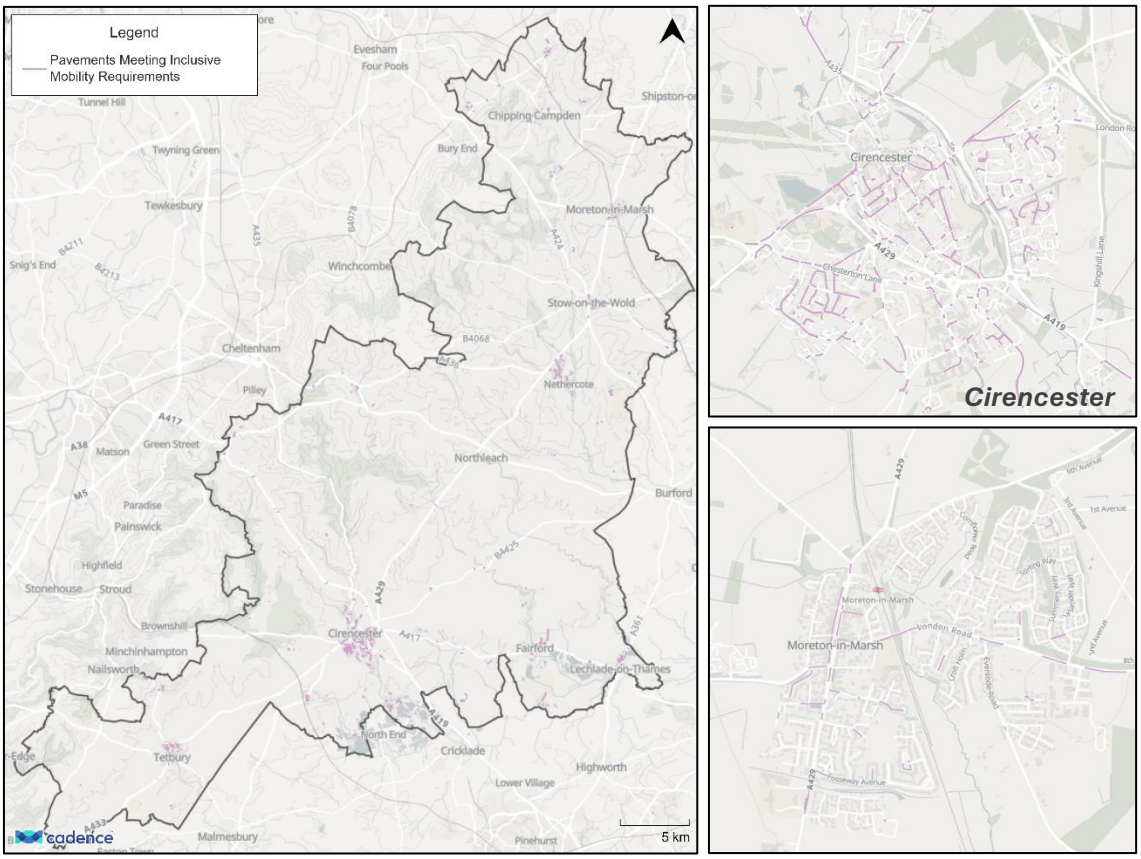
Figure 3-1 shows the distribution of Public Rights of Way across the district. Outside the main settlements, the PROW network is extensive and forms an important part of the wider green infrastructure network. However, it is mainly rural in nature and is used primarily for recreation and leisure walking. These routes are generally not designed to provide direct or continuous links to everyday services or employment areas, and are often constrained by surface condition, changes in elevation, limited width, and weak integration with settlements.

Figure 3-1: Rights of way (OpenStreetMap (OSM), 2022)



In many settlements, infrastructure has developed incrementally over time, resulting in gaps in provision and inconsistencies in route quality between settlements. Walking routes were assessed against the widths requirements of the DfT's Inclusive Mobility requirements. The highest concentration of suitable pedestrian infrastructure is generally found in the district's main settlements such as Cirencester, Fairford, Tetbury, Stow-on-the-Wold and Moreton-in-Marsh. However, within these settlements the network remains fragmented and route continuity and accessibility are often constrained by narrow footways, crossing difficulties and limited provision on the approaches to settlements.

Figure 3-2: Footpaths meeting Inclusive Design Mobility guidance (DfT, 2021) across the district and for key settlements within the district



Due to the relatively long distances between settlements and the dispersed nature of services and employment opportunities, inter-urban utility trips are unlikely to be undertaken on foot or by wheeling for most users. Thus, opportunities to increase utility walking and wheeling are likely to be focused on strengthening connections between new development sites, local services and public transport networks, ensuring that key destinations can be accessed safely and conveniently without reliance on the private car.

3.2.1.2 Cycle Network

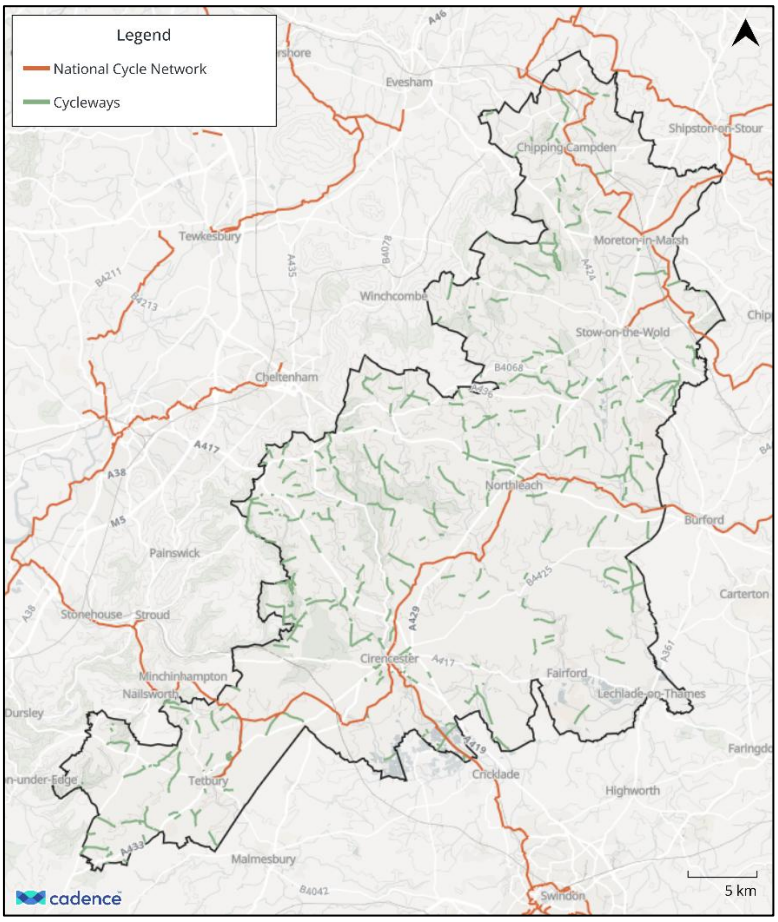
Cycle networks in the Cotswold District are also influenced by the area's rural geography, dispersed settlement pattern and the relatively long distances between key settlements. As a result, cycling is generally most viable within towns and in their immediate surroundings, while longer inter-urban trips are less likely to be undertaken by bike. Some cycle tourism is, however, expected given the district's landscape quality and attraction.

Existing cycle provision is typically fragmented, with limited continuity between settlements and reliance upon on-road routes for key sections of the network, including parts of the National Cycle Network (NCN), as seen in Figure 3-3. The NCN within the Cotswold District is a composite network with variable provision, including a significant reliance upon on-road alignments, rather than a consistently off-road strategic cycle network. Where on-road sections are present, particularly on key corridors, perceived safety and attractiveness can be reduced, especially where cyclists are required to share space with higher-speed or higher-volume traffic.

As new development comes forward, additional traffic accessing these sites has the potential to further decrease the quality and attractiveness of existing on-road cycle routes, particularly where they form part of longer-distance or leisure-focused corridors.

Moreton-in-Marsh

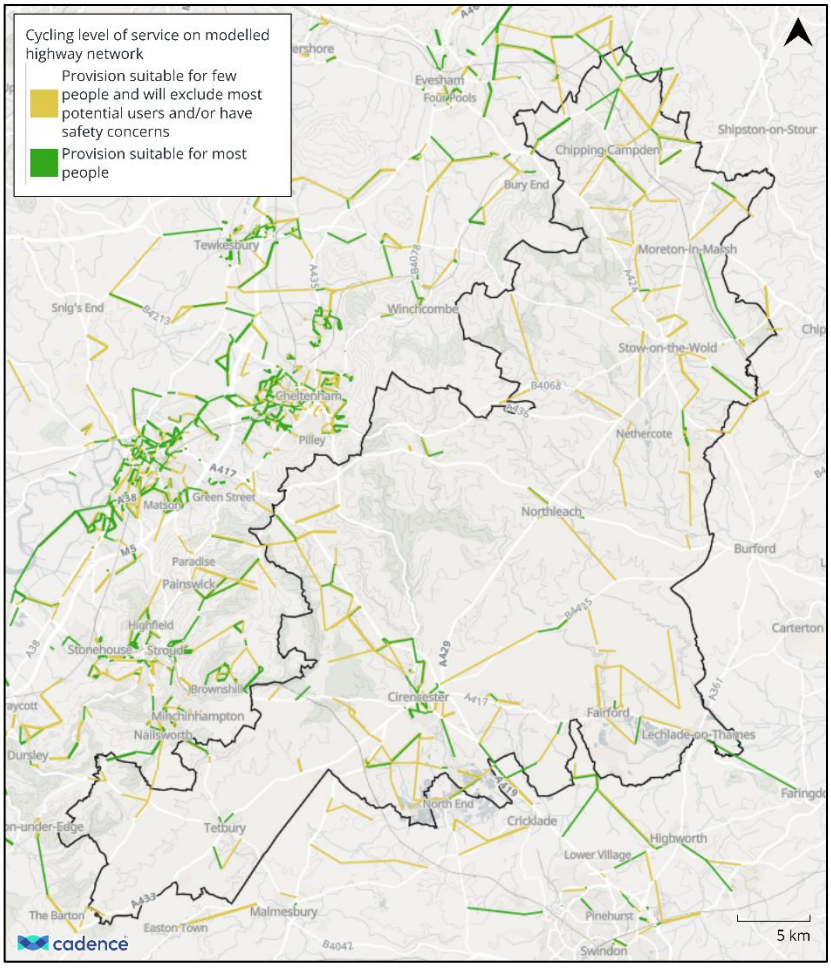
Figure 3-3: National cycle networks and cycleways (Ordnance Survey, 2023)



The extent and quality of cycle infrastructure influence cycling uptake, particularly in relation to perceived safety and comfort. Figure 3-4 displays the assessment of the highway network in the district using DfT LTN1/20 Cycling Levels of Service guidance. This determines the suitability of the highway network for active travel. A key factor is the degree of physical segregation required, which varies according to road speed and traffic volume. Traffic volumes were estimated using available Gloucestershire datasets, and speeds were derived from Ordnance Survey speed limits. Routes were classified as suitable where segregation requirements are met either through existing infrastructure or where traffic conditions are sufficiently low.

Applying Local Transport Note 1/20 (LTN 1/20) thresholds to the highway network suggests that there is some suitability for cycling; however, the network of roads currently suitable for everyday cycling remains limited and fragmented. Alongside this, there are several routes suitable for active travel dispersed across the district. At present viable cycling for all is largely delivered through traffic volumes being low enough to allow for mixed traffic rather than a lot of existing infrastructure.

Figure 3-4: Cycling Level of Service (CLoS) rating for cycleways (City Science Analysis, 2025)



3.2.2 Public Transport

3.2.2.1 Rail

Rail provision within the Cotswold District is limited, with only two stations serving the area, namely Kemble and Moreton-in-Marsh, which do not have a direct connection to each other (Figure 3-5). As a result, rail is unlikely to function for movement between settlements within the district but instead provides targeted access to the wider regional and national rail network.

Kemble station is located on the Golden Valley Line between Swindon and Gloucester and is served by Great Western Railway services. It provides direct hourly connections to Gloucester, Cheltenham and London Paddington. Moreton-in-Marsh station is located on the Cotswold Line between Oxford and Worcester and is also served by Great Western Railway, providing direct hourly services to London, Worcester and Hereford. Together, these stations provide the district with access to the wider rail network, supporting commuting, business and leisure travel. Both stations provide supporting facilities for rail users, including car parking and cycle storage, although the scale of provision varies.

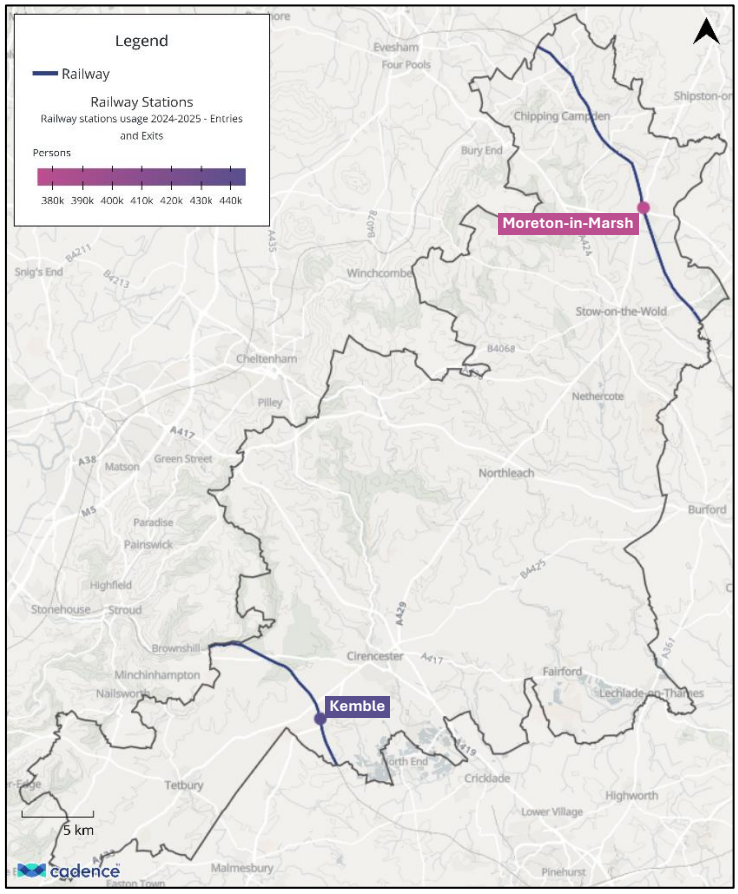
Cirencester, the largest settlement within the district, does not have its own railway station, following the closure of the former Cirencester branch line. Kemble Station, located approximately 8 km to the south-west, functions as the principal rail access for the town.

Access between Cirencester and Kemble is currently reliant on bus services, active travel connections and private vehicle travel, highlighting the importance of improving sustainable first- and last-mile connectivity.

Annual station usage data from the Office of Rail and Road (2025) shows that Kemble accommodates significantly higher passenger numbers at just over 444,000 passenger entries and exits to the station between 2024-25. Comparatively, Moreton-in-Marsh station has just over 375,000 passenger entries and exits. This categorises both stations as Category D stations, which are defined as medium-sized staffed stations that typically serve a moderate level of passenger demand and provide staffed facilities during operation hours.

A key transport focus for the Local Plan is improving sustainable access to these stations, ensuring that the development is effectively connected through walking, cycling and public transport links to support rail use as part of multi-modal journeys.

Figure 3-5: Rail network (ORR, 2025)



3.2.2.2 Bus services

Bus service provision within the Cotswold District is largely focused on connecting the main settlements, with more limited coverage across rural areas (Figure 3-6). Service frequency is generally highest within and between the larger towns, while rural routes tend to operate less frequently, reflecting lower demand and longer journey distances. Figure 3-6 illustrates

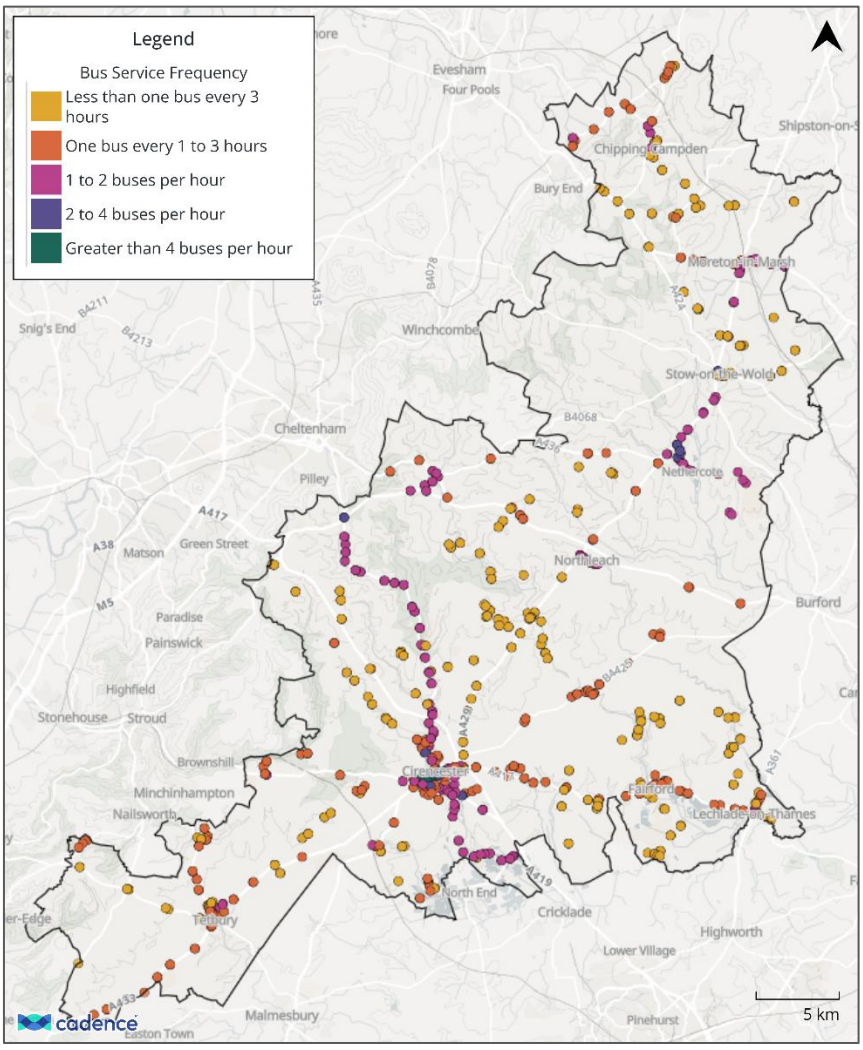
that rural areas are served by low frequency services, with areas only having a handful of bus services a day. Whereas the bus stops within Cirencester have more than four services an hour in comparison.

The district has a relatively limited level of dedicated bus infrastructure. Bus services primarily operate on the local highway network alongside general traffic, with limited provision of bus priority measures to improve bus reliability and journey times.

Consequently, operational performance varies across the network. Bus punctuality is measured as the proportion of services operating 'on time', where a service is considered on time if it departs between 1 minute early and 5 minutes 59 seconds late compared to the scheduled time. Bus punctuality in some areas of Cirencester fell to around 50% across a three-month period, indicating reliability challenges on busier urban corridors.

While the bus network provides important access to services for non-car users, especially within main settlements, the combination of variable reliability and low frequency rural services can limit its attractiveness as an alternative to the private car. This is especially true for time-sensitive journeys.

Figure 3-6: Bus service frequency at each bus stop (BODS, 2025)



3.2.3 Highway network

The Cotswolds District highway network is formed by both Strategic Road Network (SRN) and Major Road Network (MRN), which primarily accommodate longer-distance and through traffic movements, as well as the local road network. The A417 forms part of the SRN, providing a strategic link between the M4 and M5 and supporting regional and national connectivity. Key MRN corridors, include the A429 and A40, connecting the district to major centres such as Gloucester, Swindon and Oxford, supporting commuting, business, freight and tourism movements.

As a predominantly rural district, many settlements rely on these strategic corridors for access to employment, education, healthcare and other services. Consequently, the SRN and MRN are critical to both the local economy and wider regional connectivity, which can lead to pressure on the network, particularly in and around market towns and larger villages.

3.3 Current network conditions and performance

3.3.1 Congestion & capacity

Modelled 2024 base year outputs from the Gloucestershire County Council Countywide Model (GC3M), which has been calibrated and validated against observed data, for the morning peak hour (08:00–09:00) indicate that most of the highway network within the Cotswold District is operating within its capacity (Figure 3-7). However, several key routes and junctions are experiencing congestion and are operating at, or close to, capacity.

The most constrained locations include the southbound A429 approaching Cirencester (105% volume-to-capacity ratio), the A419 approaching the first roundabout on the eastern outskirts of Cirencester (100%), and the A417/B4070 junction connecting Cheltenham and Cirencester (100%). Several other sections of the A417 corridor are also operating at between 85% and 100% of capacity, indicating limited spare capacity and reduced resilience to future traffic growth.

Cirencester Road approaching Cirencester is operating at approximately 88% of its capacity. Overall, the model suggests that currently, congestion is largely concentrated on the main approaches to Cirencester and along strategic corridors, reflecting the towns role as the principal service and employment centre.

Figure 3-7: Modelled traffic flow at links as a percentage of total capacity during morning peak hour (08:00-09:00) in the 2024 Base Year

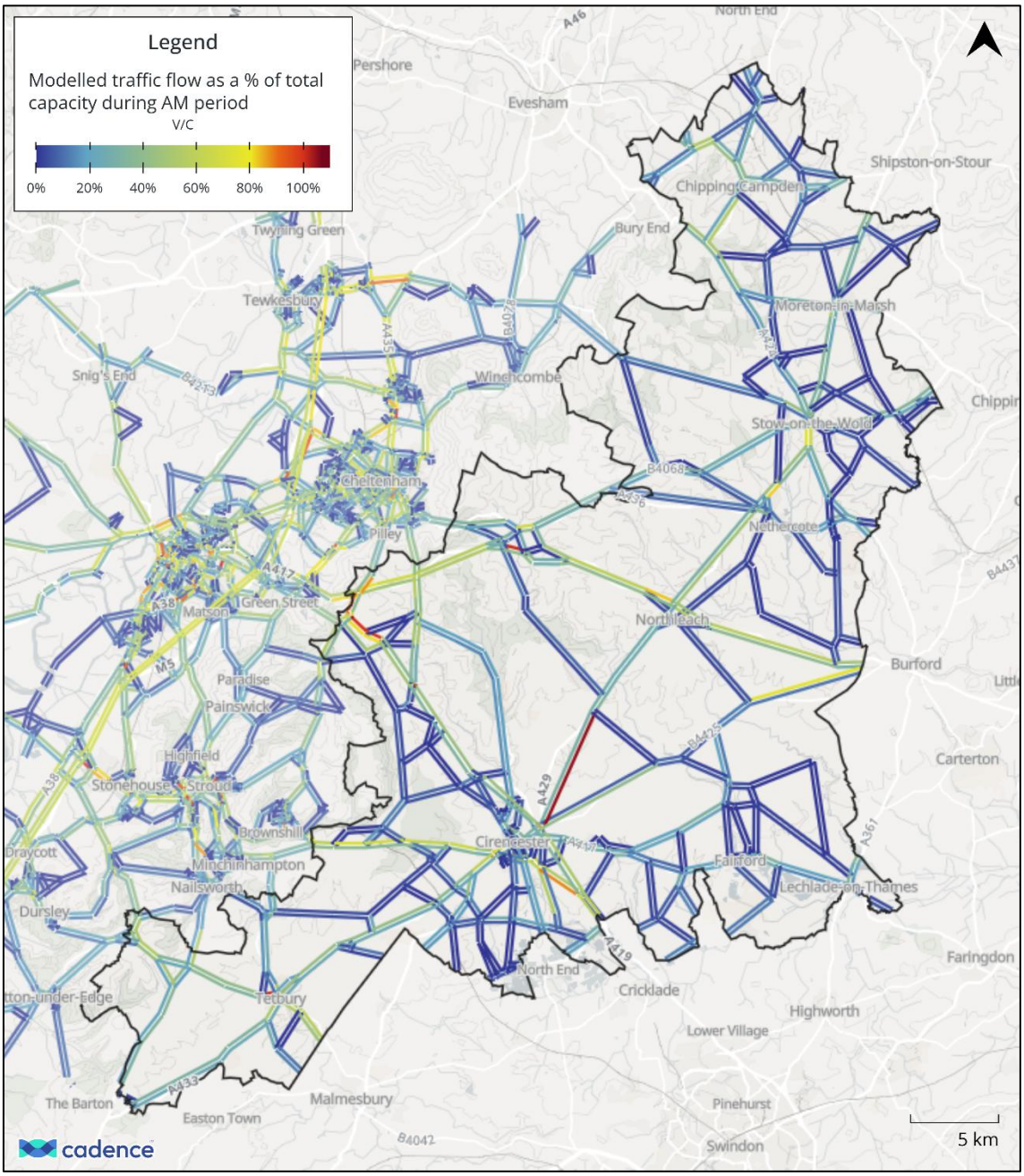
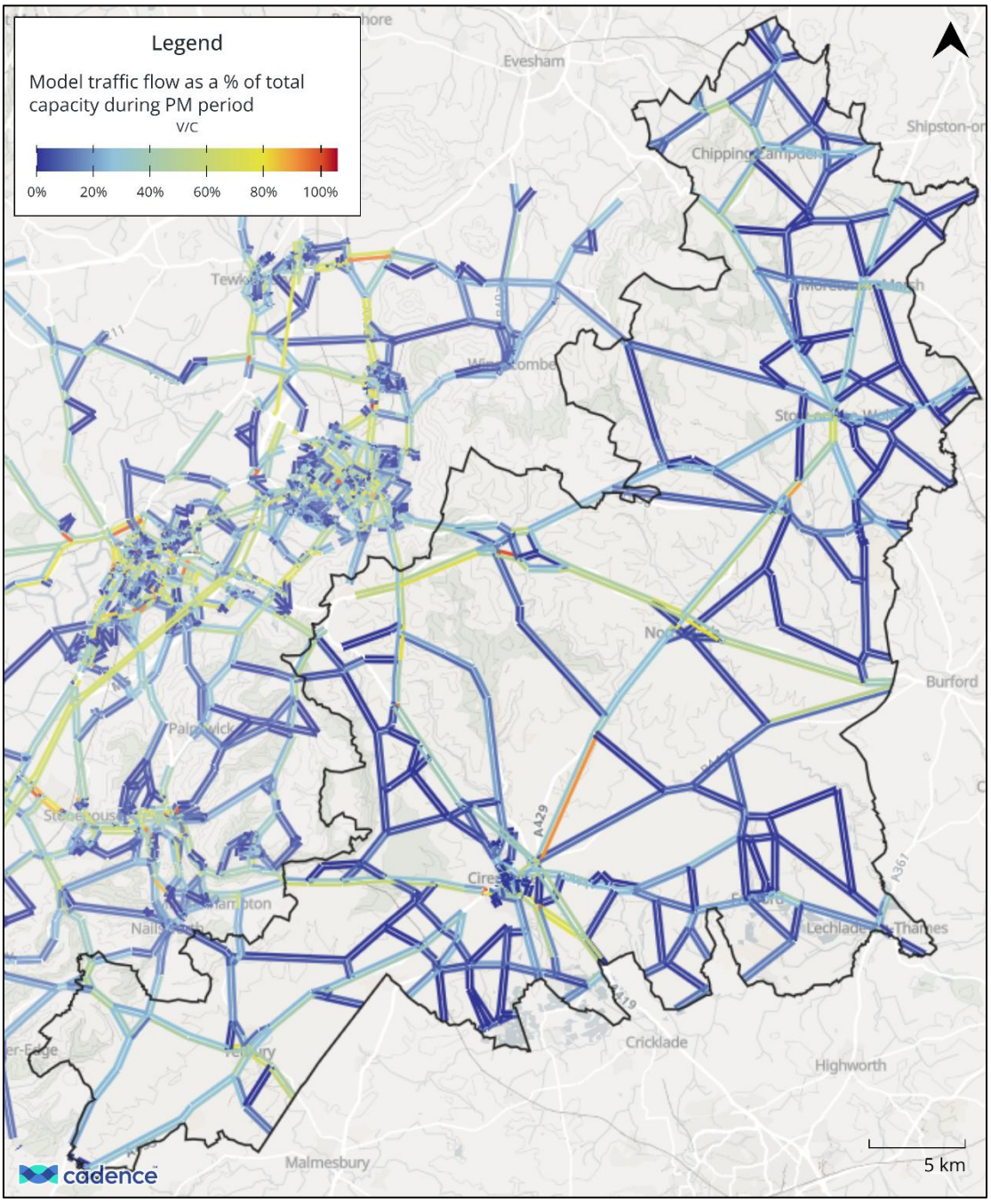


Figure 3-8: Modelled traffic flow at links as a percentage of total capacity during evening peak hour (17:00-18:00) in the 2024 Base Year

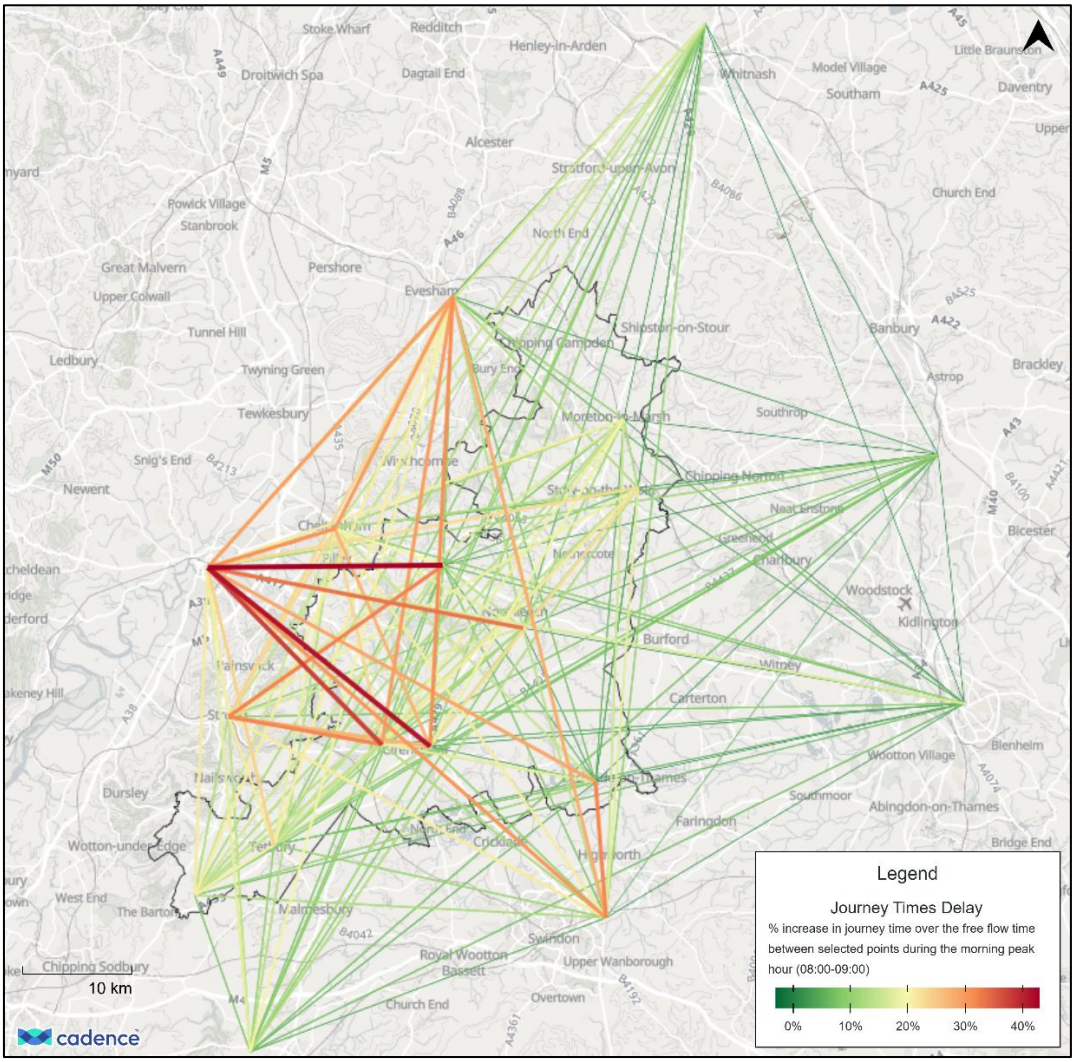


Alongside the assessment of network capacity, an analysis of journey time delays relative to free-flow conditions was undertaken using outputs from the GC3M 2024 base year. It identifies locations where congestion has the greatest impact on travel times. The results during the morning peak period (08:00-09:00) are shown in Figure 3-9. This period was selected as it exhibited the highest levels of journey time delays observed across the time periods.

The results indicate that the most significant delays occur on routes to and from Cheltenham, as well as on routes to and through Cirencester. Journeys between Cheltenham and Cirencester experience travel times of up to 40% above free-flow conditions during the morning peak period.

Similarly, routes passing through Cirencester, including movements between Swindon, Evesham and Stroud, are subject to notable delays, reflecting the concentration of traffic demand on the district's key strategic corridors. Overall, this suggests that while network-wide capacity constraints are relatively limited, congestion at key locations can have a disproportionate effect on journey times.

Figure 3-9: Modelled percentage difference in journey times across the district compared to free flow times during the morning peak period (08:00-09:00) in the 2024 Base Year



The potential effects of Local Plan growth on the operation of these strategic corridors have been assessed, with consideration given to maintaining network resilience and operational safety. Where necessary, opportunities for mitigation and network improvements have also been identified.

The assessment has considered the transport impacts of Local Plan growth on these strategic corridors in line with the National Planning Policy Framework, including whether

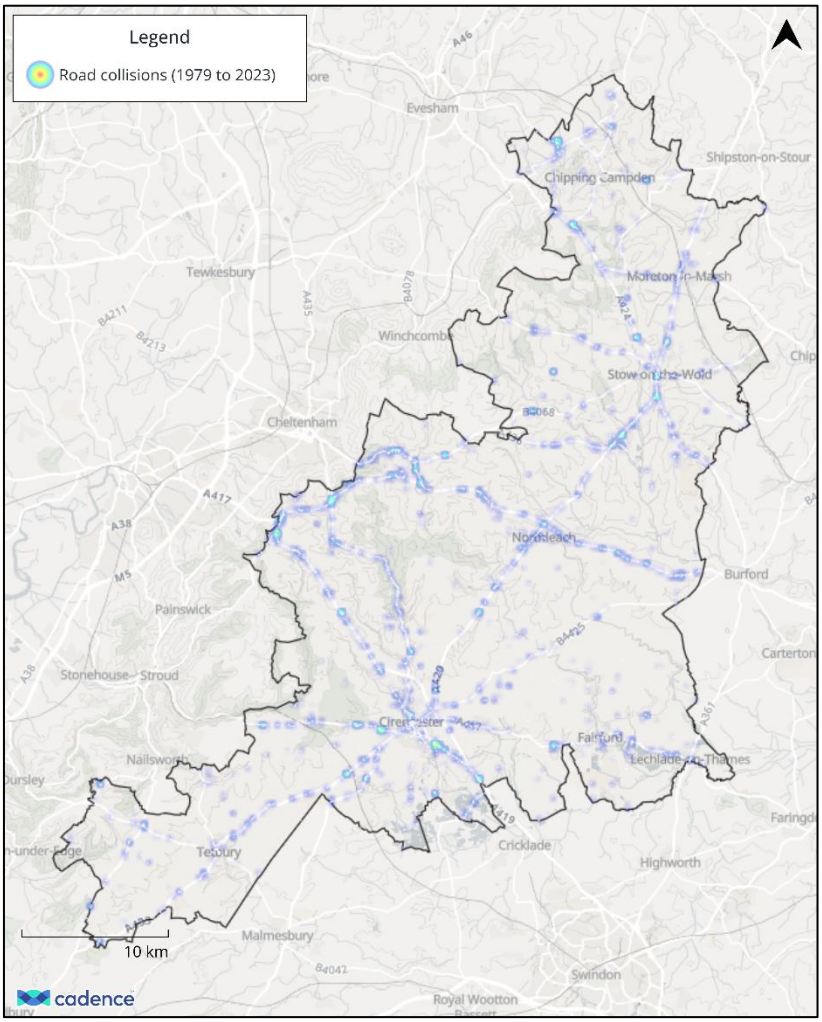
safe and suitable access can be achieved and whether any residual cumulative impacts on the road network would be severe.

3.3.2 Road safety

Figure 3-10 shows a clear pattern of where severe road collisions and fatalities have happened across the Cotswold highway network between 1979 and 2023. Most collisions are concentrated around Cirencester, which is the main hotspot in the area. There is a clear radial pattern, with collisions occurring along the strategic routes connecting Cirencester to nearby towns, especially Cheltenham, Swindon, and Stroud.

Outside Cirencester, there are far fewer collisions, with only a few scattered cases in rural areas. However, small clusters can still be seen near key junctions and on approaches to towns like Stow-on-the-Wold and Moreton-in-Marsh.

Figure 3-10: Locations of killed or seriously injured collisions between (1979-2023) (DfT, Road Safety Data, 2024)



3.3.3 Accessibility & equity

Connectivity by mode varies across the district, as shown in Figure 3-11 and Figure 3-12 using the DfT's connectivity tool. This tool evaluates how many key destinations (retail, education, healthcare etc.) can be reached within 60 minutes using different modes of travel, with higher scores indicating better connectivity to key services. The highest levels of connectivity for active travel and public transport are found in towns, particularly Cirencester, where services, infrastructure, and shorter distances make walking, cycling and bus use more viable. These areas benefit from denser networks and stronger links between key services. In contrast, more rural villages have lower connectivity due to fewer services and limited active travel infrastructure.

In comparison, car connectivity is relatively strong across the district, with the road network providing direct links between most settlements. This reinforces the reliance on private vehicle outside of towns.

Overall, this creates an inequitable pattern of accessibility, where larger towns have a wider choice of transport options, and rural areas are more dependent on cars to access essential services.

Figure 3-11: Connectivity score for active travel (DfT Connectivity Tool, 2025)

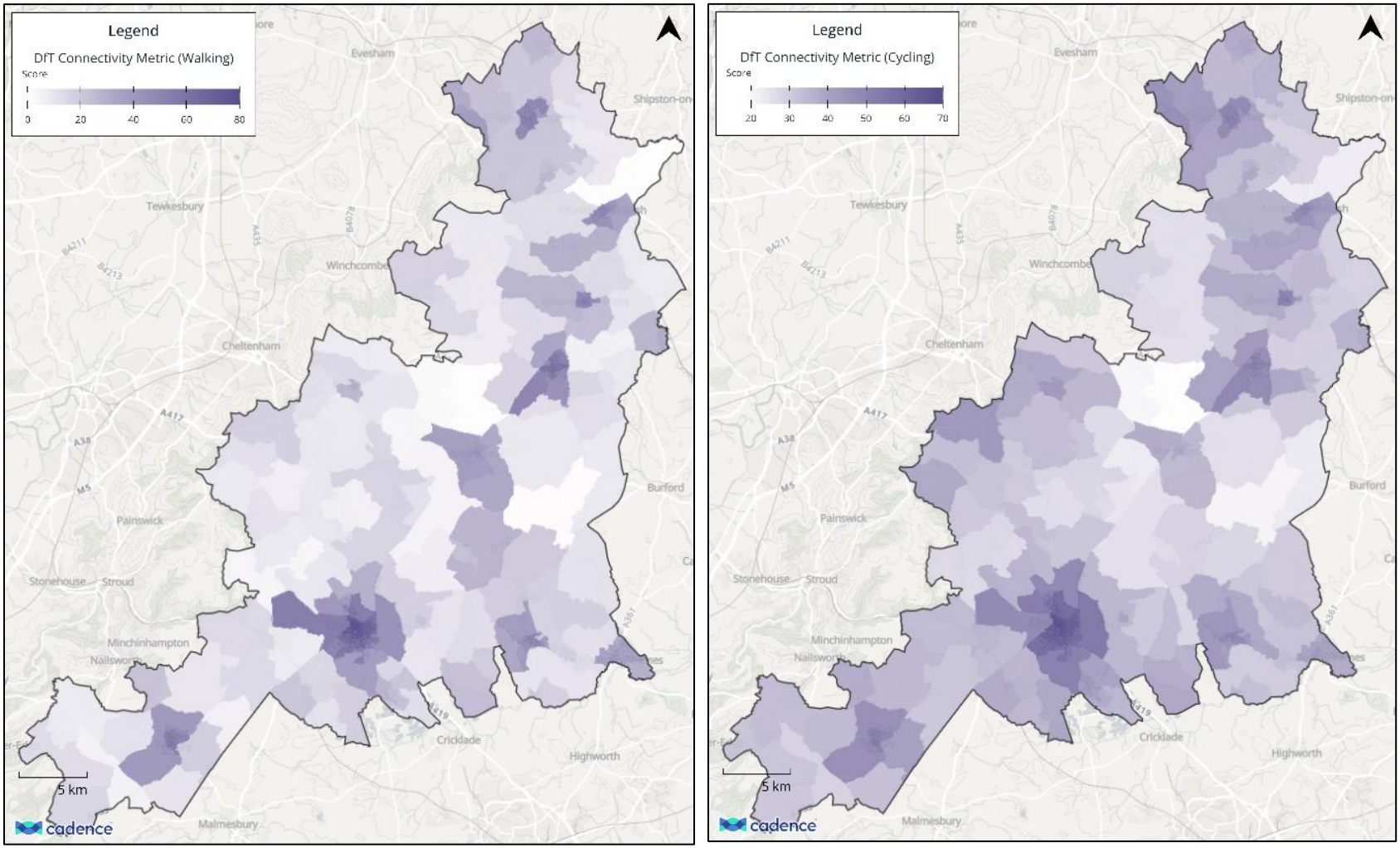
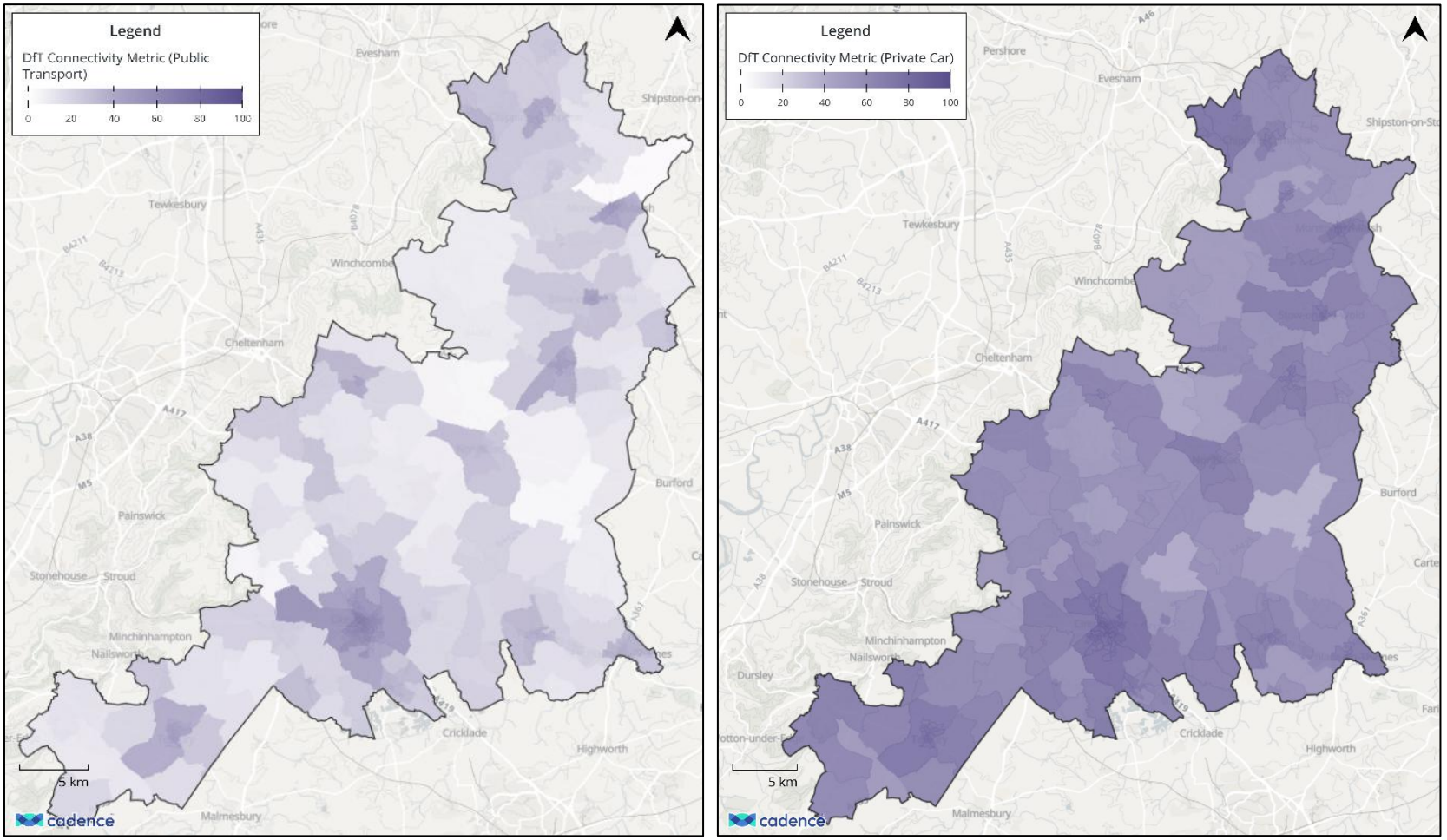


Figure 3-12: Connectivity score for public transport and private car (DfT Connectivity Tool, 2025)



3.4 Travel behaviour & movement patterns

Travel demand and movement patterns in the Cotswold district are strongly shaped by its rural settlement pattern, ageing population, and dispersed provision of key services. The district has a population of 91,360 (GCC, 2023), with most residents concentrated in Cirencester, as well as the smaller towns of Tetbury, Moreton-in-Marsh, Stow-on-the-Wold and Chipping Camden. These act as the main origin and destinations for most trips in the district. Outside these towns, low density rural settlements and longer distances to key services increase reliance on the highway network.

The population is older than the national average, with a median age of around 49 years and approximately 28% of residents aged over 65 years old (GCC, 2023). The ageing profile, alongside higher levels of long-term conditions, can increase dependence on accessible and reliable transport, particularly for essential journeys such as healthcare, education and shopping.

Overall, the combination of rurality and an ageing population mean that travel demand is unevenly distributed and strongly car-reliant, with towns concentrating most activity and rural areas facing more limited accessibility.

4. Policy context

4.1 Introduction

A comprehensive review of transport and planning policy, guidance and best practice relevant to the Local Plan transport evidence base was undertaken. The review included documents at national, county-wide and district levels, as well as policies of neighbouring authorities, best practice and guidance.

The review informed the Local Plan transport strategy by identifying best practice from elsewhere, and policies and plans to be considered when developing the Local Plan. The documents included in the review are shown in Figure 4-1.

Figure 4-1: Summary of documents reviewed

4.2 National policy

The national policy landscape is undergoing significant change following the July 2024 General Election, with economic growth, housing delivery, and decarbonisation central to the government's agenda. Five areas of national policy are of particular relevance to the Cotswold District Local Plan Transport evidence base: planning reform and housebuilding; major transport infrastructure; and net zero and local sustainable transport; the future of rural connectivity; and mobility for older people.

Primarily, significant planning reform in the form of the revised National Planning Policy Framework (NPPF) (2024) is the most relevant area of national policy, outlining a vision-led approach to transport planning, to provide a strong evidence base to inform decisions about transport policies and measures. It establishes the role of transport as a key enabler of achieving the new mandatory housing growth targets for Cotswold, and the importance of locating development where the need to travel is minimised and transport options exist.

Regarding major transport infrastructure, the government is shifting away from large capital schemes towards smaller evidence-led interventions. This is seen in the scaling back of HS2, which has potential implications for proposed local rail schemes such as the Cirencester - Kemble railway restoration. The A417 and A419 are the only Strategic Road Network routes in the district, and National Highways (2024) have shifted focus from network expansion and enhancement to prioritising renewals, resilience, and efficiency.

The government's 2050 net zero target requires local plans to demonstrate a shift away from private car use. Most active travel investment is directed at urban environments. Given the district's dispersed settlement pattern and higher road speeds, e-bikes and micromobility are likely to be more relevant than conventional cycling and walking infrastructure across much of the district. The DfT's Future of Transport: Supporting Rural Transport Innovation (2023) directly addresses this context, identifying high car dependency as both an environmental and socioeconomic issue and setting out nine principles for rural transport planning, which emphasise:

- Safety and accessibility for all users
- Micromobility as the default for short rural trips
- Affordable public transport and shared mobility as system fundamentals
- Rapid transition to zero emissions
- Integrated systems combining public, private, and community-led modes
- Open data sharing to improve user choice and system performance

Finally, with Cotswold district having a median age of 49 years old, exceeding the national average of 40 years old, the mobility needs of older residents are central to this assessment. The ORR's Accessible Travel Policy (2020) and the DfT's Inclusive Transport Strategy (2018) require adequate provision for mobility aid users, rest spaces at transport hubs, accessible wayfinding that does not assume high digital literacy, and early engagement with older and disabled people in the design of new infrastructure.

Collectively, the national policy context establishes clear expectation for this assessment. Sustainable and active travel should be prioritised where viable, with rural specific solutions implemented where conventional options are not appropriate. Additionally, given the district's demographic context, the needs of an aging population must be embedded throughout the assessment. Underpinning this is a vision-led approach, that puts the transport vision for Cotswolds at the centre from the outset.

4.3 County-wide policy

Gloucestershire County Council has developed strategies that collectively set the county transport policy framework. The Local Transport Plan (Gloucestershire County Council, 2020) establishes overarching ambitions around sustainable growth, rural connectivity, and equality of opportunity, with a target of net zero transport emissions by 2045. At the beginning of 2026, GCC has launched engagement to update their Local Transport Plan, for adoption of a new plan in 2027. This translates these ambitions into a practical plan, targeting an 80% reduction in transport emissions by 2030 through modal shift, avoiding unnecessary travel, and improving vehicle efficiency. The Climate Change Strategy provides the broader environmental framework, reinforcing the need for low-carbon travel and resilient, inclusive networks.

For Cotswold district, the key consideration across these strategies is balancing ambitious decarbonisation targets and the practical challenges of delivering sustainable transport in a dispersed, car-dependent rural district. Improving rural bus services is a key priority, though long routes, low passenger numbers, and high subsidy requirements make this particularly challenging in the district. Active travel investment is most deliverable within market towns such as Cirencester, while longer inter-settlement distances and higher road speeds limit its effectiveness across the wider rural area. Supporting the transition to electric vehicles is likely to play a greater role in reducing emissions across the district than modal shift alone, given the reliance on private cars for many journeys. Underpinning all of this is the need to maintain accessible, resilient transport networks that serve an ageing population and communities.

4.4 Cotswold District Council policy

The update of the Local Plan (2025-2043) forms part of a wider programme of work which moves towards achieving the Council's net zero ambitions, adopting the 'Do Everything' approach set out the Cotswold Transport Decarbonisation Plan (2023). Under this approach, there is no single solution to delivering CDC's net zero ambitions by 2045, all modes and options need to be considered. The Local Cycling and Walking Infrastructure Plans (LCWIPs) identify long-term improvements needed to support walking and cycling in the district. Within Cotswold, only Cirencester has an adopted LCWIP (Gloucestershire County Council, 2022), which identifies fragmented active travel routes, poor links to public transport and a high dependence on private car use. The plan proposes improved cycle corridors, enhanced pedestrian connections, and better access to key destinations such as schools, employment areas, the town centre, and Kemble Station.

The Cirencester LCWIP (2022) offers a detailed framework for local interventions, while the Gloucestershire Overarching Cycling Infrastructure Plan (Gloucestershire County Council, 2023) highlights the need to improve rural cycling connectivity and prioritises the Cirencester–Cricklade and Moreton-in-Marsh–Stow-on-the-Wold corridors. Together, they support the identification of active travel schemes that could reduce car dependency and improve sustainable access across the district.

4.5 Adjacent authorities' policy

A review of neighbouring authorities' Local Plans and comparable rural-tourism areas highlights several external factors that could influence transport demand and infrastructure requirements within the Cotswold District.

Neighbouring authorities, such as West Oxfordshire District council are currently in the process of reviewing their Local Plans. The current West Oxfordshire Local Plan was formally adopted in 2018 and sets out the district's planning framework from 2011 to 2031. The plan is currently in consultation for extending the plan to 2043, looking at currently delivery and potential new developments. Importantly for Cotswold, this could include further development at Chipping Norton, whic may impact traffic volumes on the A44 connecting to Moreton-in-Marsh.

Similarly, an emerging joint development plan is being prepared by Stratford-on-Avon District council and Warwick District Council, establishing a long-term spatial growth strategy up until 2050. Importantly for Cotswold, the Plan considers potential growth at Shipston-on-Stour, potentially impacting traffic volumes along the A429 through Moreton-in-Marsh. Additionally, the Plan puts forward a large strategic site near Long Marston, which could substantially impact traffic levels near Mickleton.

Alongside this, the emerging South Gloucestershire Local Plan proposes major growth at Brabazon and Charfield, supported by new rail stations, mobility hubs, public transport enhancements and a strong focus on reducing car dependency.

The review also highlights valuable lessons from rural tourism destinations such as the Highlands and the Lake District, where seasonal visitor demand places significant pressure on transport networks and local communities. Both areas emphasise the need for sustainable access measures, including seasonal public transport services, mobility hubs, park-and-ride facilities, active travel infrastructure and improved connections between visitor destinations. For the Cotswold Local Plan, this suggests that transport planning should consider not only local growth but also the cumulative impacts of neighbouring development and tourism-related travel demand. The findings support a stronger focus on sustainable transport, modal shift and integrated land-use planning, while recognising the need to balance economic benefits from tourism with the protection of resident quality of life, environmental objectives and network performance.

4.6 Guidance and best practice

Issues for consideration identified in guidance and best practice include:

- The DfT's Common Analytical Scenarios provide a useful reference point for understanding future uncertainties related to the economy, behaviour, and technology, and offer insights that can help shape local scenario development.
- National Design Guidance [3] promotes the creation of well-designed, climate-conscious communities where people can live, work, and thrive. It recommends developments that integrate environmental considerations and promote healthy, low-carbon lifestyles. This aligns with CDC's ambition for encouraging sustainable modes and vision-led transport planning.

[3] Ministry of Housing, Communities & Local Government, 2021

- The National Design Guidance also emphasises the importance of clear street layouts and accessible, safe, and efficient transport networks. It supports a multi-modal transport approach, highlighting walking, cycling, and public transport. This informed the Local Plan's overall objectives to encourage modal shift towards more sustainable and inclusive transport options.
- Encouragement for local planning authorities to define a clear vision for future growth and then test a range of development scenarios to determine the most sustainable and efficient transport solutions. [4]
- The importance of early engagement with National Highways strongly emphasises the importance of early and ongoing engagement to identify and address capacity, connectivity, and safety issues on the SRN.
- National Highways' focus on assessing the cumulative and residual impacts of proposed development on the SRN; the sustainability and accessibility of site allocations; and the extent to which transport policies are aligned with local and national infrastructure priorities
- Active Travel England recommends criteria that may be useful to inform the Local Plan in terms of sustainability. These include trip generation and assignment for non-vehicular modes; access to amenities and public transport, off-site transport infrastructure, place-making, end-of trip facilities (such as cycle parking) and travel planning. [5]
- LTN1/20 provides technical guidance on national standards for cycle infrastructure based on networks being coherent, direct, safe, comfortable and attractive. [6]
- Guidance sets out ten core principles of Active Design to help shape environments that encourage people to be active as part of daily life. The principles include: walkable communities, providing connected active travel routes, mixing land uses and high quality streets and spaces.[7]

[4] Economic Role of National Highways (2024)

[5] Active Travel England Standing Advice Note: Active Travel & Sustainable Development (2024)

[6] Local Transport Note (LTN1/20) Cycle Infrastructure Design (DfT, 2020)

[7] Active Design (Sport England, Active Travel England and Office for Health Improvement and Disparities, 2023)

5. Forecasting methodology

5.1 Introduction

This chapter describes the forecasting methodology adopted for the Cotswold District Local Plan transport assessment. It outlines the strategic transport model used to undertake the forecasting, the updates made to tailor the model for the Cotswold District, and the assumptions adopted to develop the future year scenarios. The chapter also describes the general approach used to forecast the Preferred Spatial Option (PSO) and the intervention packages, with the detailed application of the methodology presented in the subsequent chapters.

5.2 Summary of approach

Figure 5-1 provides an overview of the forecasting methodology. The primary strategic modelling tool used was the Gloucestershire Countywide Multi-Modal Model (GC3M) described in further detail in the following section. The existing base and future year models were updated to align with the Cotswold District Local Plan period and to provide greater network detail and representation within the Cotswolds. The GC3M has a 2019 base year, and a present-day validation exercise was undertaken comparing a November 2024 forecast year against observed 2024 traffic counts and journey time data. This ensured the model had a robust starting point for forecasting.

Future year forecasting followed a staged approach, progressing from the 2043 Core and Core Minus Scenarios to the assessment of the Spatial Options, the Preferred Spatial Option and the intervention packages. Each stage of the methodology is described in the following sections, with its application presented in Chapters 6 to 8.

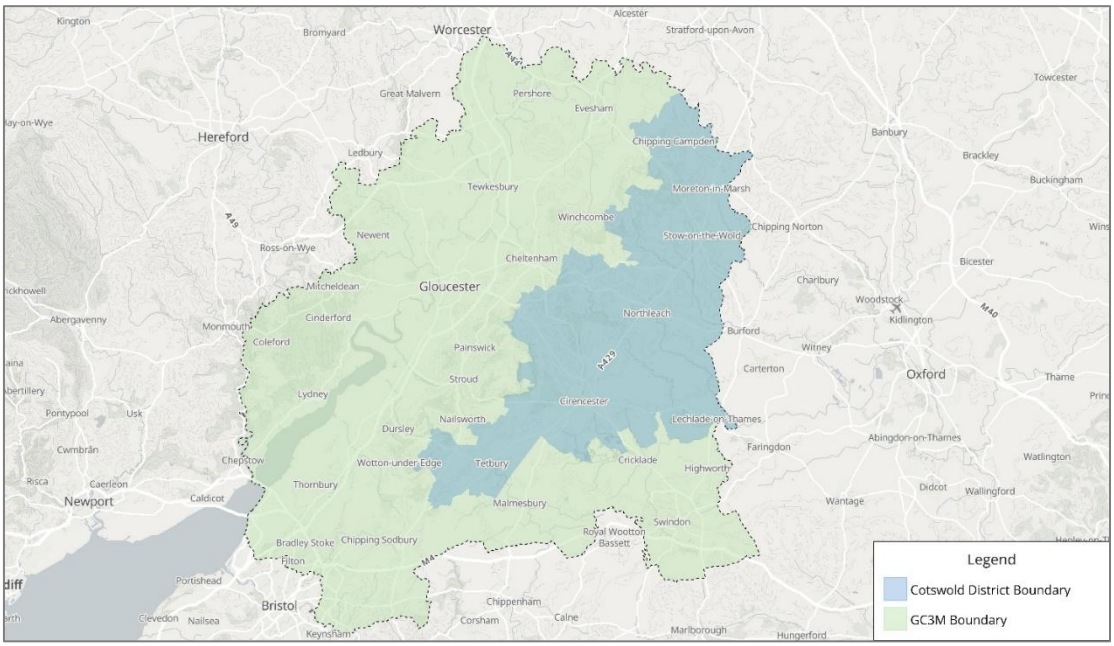
Figure 5-1: Summary of approach to forecasting

Order	Stage	Notes	Further detail
First	GC3M	• 2019 base year • 2031 and 2041 forecast years • Gloucestershire County Council Uncertainty Log	Chapter 5
	Present Year Validation	• Update the GC3M from a 2019 to a 2024 base year, including highway network updates • Validate the updated model against observed 2024 traffic counts and journey time data	Chapter 5
	2043 Core Scenario	• Incorporate committed land use changes and transport network schemes	Chapter 5
	2043 Core Minus Scenario	• Remove Local Plan development growth from the Cotswold District while retaining background traffic growth	Chapter 5
	Preferred Spatial Option	• Forecast the transport impacts of the Preferred Spatial Option	Chapter 6
Last	Preferred Spatial Option with Interventions	• Assess the Preferred Spatial Option under three intervention packages comprising: ○ (A) Business as Usual+ ○ (B) Visionary Ambition ○ (C) Residual Impacts Mitigation ○ (D) Vision Led Scenario (VLS)	Chapter 7

5.3 The GC3M

The GC3M is a strategic multi-modal model developed for Gloucestershire County Council, Figure 5-2 illustrates the extent of the area covered by the GC3M, showing that it encompasses the whole Cotswold District as well as the remainder of Gloucestershire and areas beyond. The GC3M consists of a highway model and a public transport and variable demand model, with travel segmented by car, goods vehicles, bus, rail, cycling and walking.

Figure 5-2: GC3M area of detailed modelling coverage



5.3.1 GC3M structure

The GC3M follows a traditional four-stage modelling structure (trip generation, trip distribution, mode choice and assignment). The trip distribution and mode choice stages are carried out by the Variable Demand Model, which is implemented in VISUM, while highway assignment is carried out in SATURN. VISUM is also used for the public transport model.

5.3.2 Modelled time periods

The GC3M represents a neutral weekday (Monday to Thursday) in 2024. The highway model includes derivatives for three time periods, while the public transport model represents the average hour across these periods. As the GC3M covers the whole of Gloucestershire County, the morning and evening peak periods in the highway model are aligned with the county-wide peaks, rather than being specific to the Cotswold District. These time periods are set out in Table 5-1.

Table 5-1: GC3M modelled time periods

Highway model	Public transport model
Morning - 08:00 to 09:00	AM average hour - 07:00 to 10:00
Inter peak average hour - 10:00 to 16:00	Inter peak average hour - 10:00 to 16:00
Evening - 17:00 to 18:00	PM average hour - 16:00 to 19:00

5.3.3 Variable demand model

The Variable Demand Model (VDM) is a 24-hour, logit-based model that determines both destination and mode choice. It does not include an explicit time-period choice; instead, daily trips are allocated to specific time periods using fixed factors. Freight is represented by a base-year origin–destination matrix, which can be scaled for future scenario years. The demand matrices produced by the VDM capture all trips across all modes, including active travel.

5.3.4 Highway network

The area within the GC3M boundary (see Figure 5-2) represents the detailed modelling area, where the highway network and junctions are simulated in detail (e.g., via simulation coding) to capture junction delay. Outside this boundary, links are coded using fixed speeds (e.g., via buffer network coding).

5.3.5 Public transport networks

The public transport network comprises rail, bus, rail-based Park & Ride, and bus-based Park & Ride services. While the bus-based Park & Ride element is uncalibrated, it accounts for only a minor proportion of total journeys; this omission is not considered significant in the context of this strategic-level assessment. The public transport model is timetable-based and consists of services imported directly from General Transit Feed Specification (GTFS) datasets.

5.3.6 Initial GC3M modifications for Cotswold District

Modifications were made to the GC3M to tailor it for use in the development of the CDC Local Plan as follows:

- The base year was updated from 2019 to 2024 as described in the 2024 Present Year Validation Technical Note
- the modelled highway network was updated to capture any highway schemes introduced between 2019 to 2024. A full list of schemes is provided in the Forecasting Approach Technical Note

Following these modifications the model base year was validated against observed counts and journey times to ensure the model was suitable for forecasting.

5.4 Future year Forecasting Assumptions

5.4.1 2043 Forecast Year

A future year model was developed for the 2043 forecast year, aligning with the plan period of the CDC Local Plan. Future year demand matrices were generated within the GC3M to reflect projected land-use changes across the study area.

5.4.2 Core Scenario

The 2043 Core Scenario was developed for the Cotswold District using the GC3M to provide a robust and consistent baseline from which to derive background traffic growth, modal shares, and trip distribution for the PSO.

The Core Scenario represents forecast land use changes within the Cotswold District and the wider Gloucestershire County area in accordance with the GC3M Uncertainty Log (Version 2.1), as described in Annex D. The scenario includes all committed residential and non-residential developments classified as 'near certain' and 'more than likely' within the Uncertainty Log. Outside Gloucestershire County, background traffic growth has been applied using the Department for Transport's National Trip End Model (NTEM) forecasts through TEMPro.

Figure 5-3 and Figure 5-4 illustrate the locations of committed residential and employment sites from the baseline 2043 Core Scenario.

Figure 5-3:Uncertainty Log 2043 Committed Residential Sites

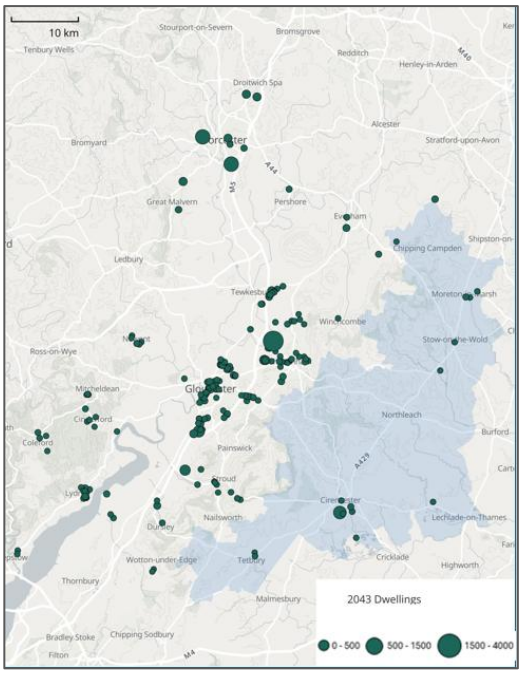
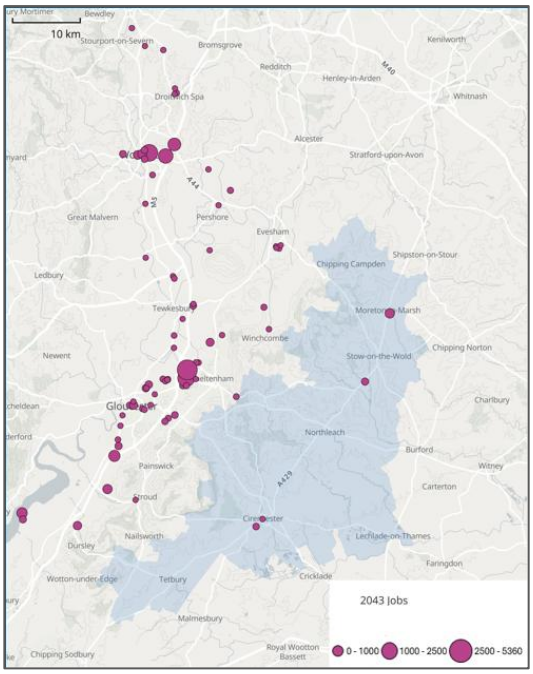


Figure 5-4: Uncertainty Log 2043 Committed Employment Sites



5.4.3 The Core Minus Scenario

The 2043 Core Minus Scenario was developed using the GC3M to provide the baseline comparator for the assessing the PSO. In the Core Minus Scenario, all development growth within the Cotswold District between 2024 and 2043 is removed. Background traffic growth is retained across the Cotswold area, while growth in areas outside the district is represented using the GC3M growth assumptions, which are equal to or exceed NTEM forecasts in all external locations.

5.4.4 Trip rates

Trip rates for residential, mixed-use and employment sites were derived from the TRICS database. This was achieved by classifying the sites and applying class-specific trip rates. This generalised approach is appropriate for the strategic nature of a local plan transport assessment. More detailed assessments of trip generation and distribution will be determined through site-specific transport assessments as part of the planning process for individual developments.

Residential sites were classified according to their location type, based on differences in travel behaviour, levels of car dependency, and access to public transport. The trip rates were further categorised into three location types: Residential, Residential Isolated, and Village, reflecting the characteristics associated with each location type.

illustrates the location of the strategic residential sites and their respective classification. Table 5-2 outlines the residential trip rates for each category. Full trip rates by mode are provided in the SLP and Cotswold Local Plan Trip Rate Technical Note. The classes are:

- **Residential:** Located within continuous urban built-up areas. Travel patterns and trip rates are lower compared with other categories, reflecting higher levels of accessibility and a lower reliance on private vehicles.
- **Residential Isolated**: Located within the vicinity of the main towns but surrounded predominantly by non-residential land uses. Travel patterns tend to differ from residential areas, as a greater reliance on private vehicles is expected, resulting in trip rates that reflect longer average journeys.
- **Village:** Located within rural areas and physically separated from main urban areas and towns, with the intervening land being mostly undeveloped. Travel behaviour and trip rates differ from both Residential and Residential Isolated areas, as accessing core services requires longer, rural journeys.

Table 5-2: Residential Trip Rates (per dwelling per hour) by location category

Category	Period	Vehicles		
		Arrivals	Departures	2-Way
Residential	AM (08:00-09:00)	0.120	0.313	**0.43**
	IP (Avg 10:00-16:00)	0.148	0.143	**0.29**
	PM (17:00-18:00)	0.293	0.145	**0.44**
Isolated Residential	AM (08:00-09:00)	0.124	0.349	**0.47**
	IP (Avg 10:00-16:00)	0.155	0.149	**0.30**
	PM (17:00-18:00)	0.309	0.164	**0.47**
Village	AM (08:00-09:00)	0.164	0.416	**0.58**
	IP (Avg 10:00-16:00)	0.159	0.153	**0.31**
	PM (17:00-18:00)	0.342	0.166	**0.51**

It should be noted that no residential sites within the Cotswold Study area were assessed as meeting the TRICs criteria for Residential classification. Consequently, all sites were classified as either Residential Isolated or Village in accordance with TRICS methodology (Figure 5-5 and Figure 5-6).

Figure 5-5: North Cotswold trip rate categories for residential sites in the PSO

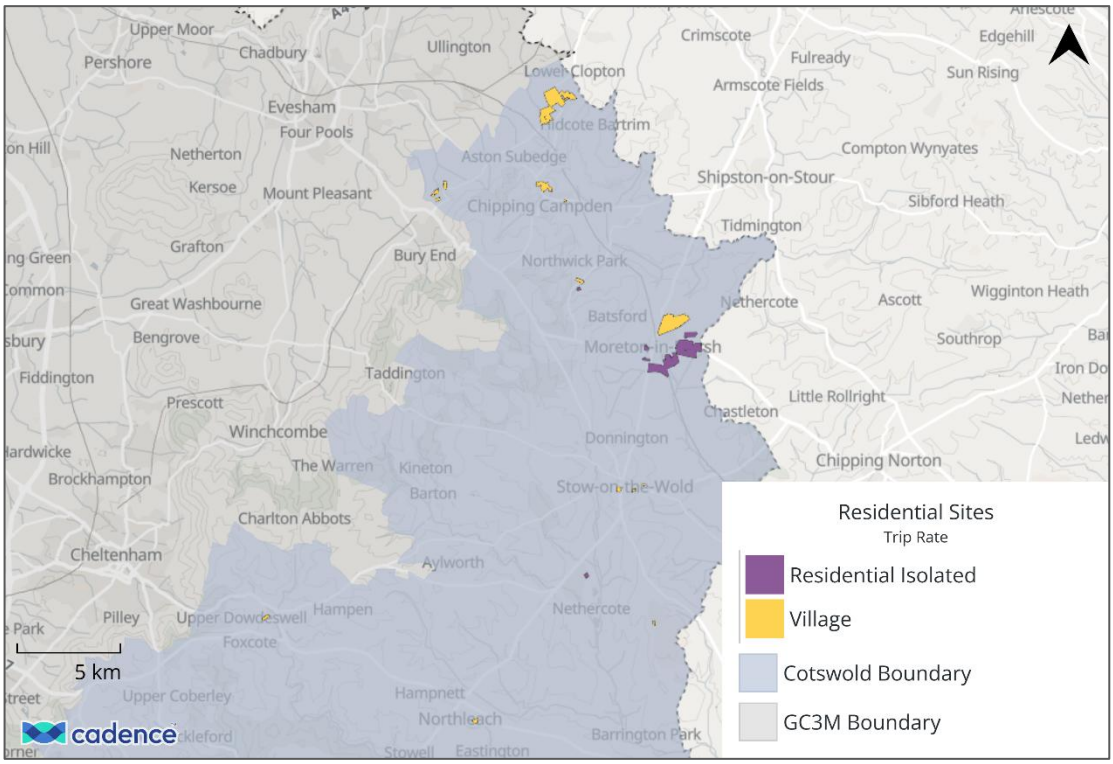
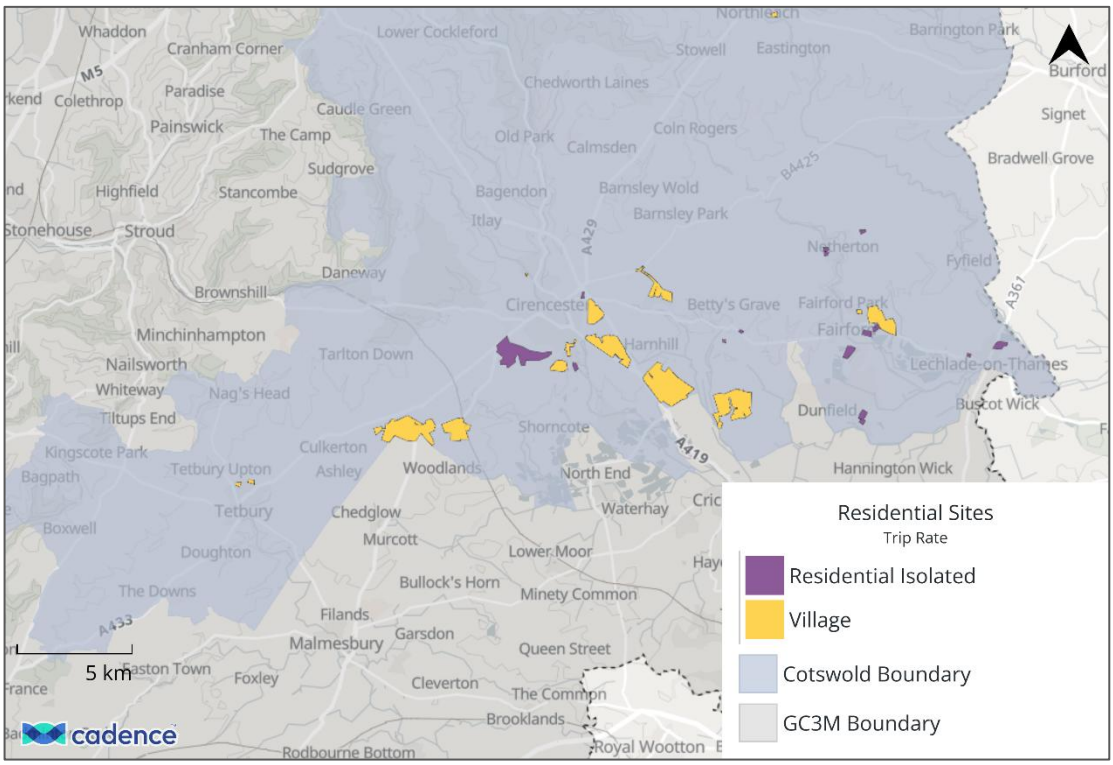


Figure 5-6: South Cotswold trip rate categories for residential sites in the PSO



Employment sites were classified according to the proposed land use in uncertainty log, with the classes being: Business Park (B1/Office), Industrial Estate (B2), or Warehousing (B8). Table 2-1 summarises the trip rates for each land use.

Table 5-3: Employment Trip Rates (per dwelling per hour) by location category

Category	Period	Vehicles		
		Arrivals	Departures	2-Way
Business Park	AM (08:00-09:00)	1.512	0.127	**1.64**
	IP (Avg 10:00-16:00)	0.126	0.161	**0.29**
	PM (17:00-18:00)	0.126	1.290	**1.42**
Industrial Estate	AM (08:00-09:00)	0.371	0.145	**0.52**
	IP (Avg 10:00-16:00)	0.221	0.237	**0.46**
	PM (17:00-18:00)	0.119	0.344	**0.46**
Warehousing	AM (08:00-09:00)	0.083	0.040	**0.12**
	IP (Avg 10:00-16:00)	0.057	0.068	**0.12**
	PM (17:00-18:00)	0.045	0.081	**0.13**

5.4.5 Trip Distribution

Trip distributions represent the spatial pattern of travel demand associated with each development site, determining how trips are allocated across the transport network between zones. These distributions were derived from the GC3M by extracting zone-to-zone trip patterns from the VDM output matrices. Consequently, new development trips were allocated across the network in proportion to the demand patterns derived from the VDM's destination choice module. This allocation is based on the generalised cost of travel, the residential and employment zonal data, and the trip rates derived from the TRICS analysis.

5.5 Forecasting the PSO

Following the selection of the PSO, the agreed residential and employment land use assumptions were incorporated into the GC3M. New model zones were created for residential sites exceeding 500 dwellings and for all employment sites, while smaller residential developments were allocated to the existing GC3M zoning system.

Trip rates, as described in Section 5.4.4, were applied to derive updated trip ends reflecting the additional travel demand generated by each scenario. The modelled demand was controlled to these trip ends, ensuring that the forecast demand remained consistent with the agreed trip rates. No internalisation reduction factor was applied, providing a robust assessment of the transport impacts. The resulting zonal demand was processed through the GC3M to determine destination and mode choice before the forecast trip matrices were assigned to the corresponding modal networks. The detailed Spatial Options assessment is presented in Chapter 6.

The resulting forecast represented the preferred development strategy and formed the basis for the subsequent assessment of the four intervention packages

5.6 Intervention Assessment Methodology

5.6.1 Introduction

Section 2.2 introduced the Vision & Validate approach, including the three key steps of:

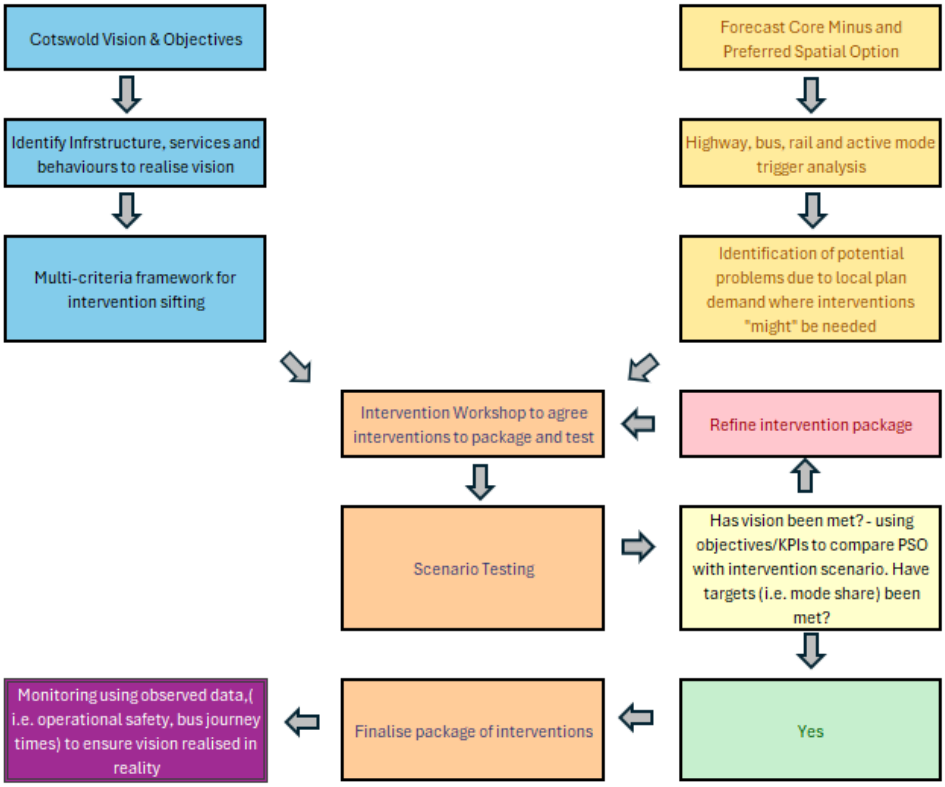
- agreeing a long-term vision for the places the Local Plan seeks to create;

- identifying the infrastructure, services and behaviours needed to realise the vision; and
- validating whether the preferred spatial option achieves the outcomes described in the vision.

Transport modelling formed an important part of a wider assessment of the PSO. Historically, transport modelling has been shaped by a 'predict and provide' approach rather than being aligned with Vision & Validate. Fundamentally, the modelling approach used differs from a predict and provide approach as modelling is used as a proactive tool to inform the plan-making process rather than a reactive tool to simply assess the impacts of the spatial options and measures.

Figure 5-7 summarises the intervention assessment methodology, combining the vision and objectives as well as the flag analysis and the Multi Criteria Assessment Framework (MCAF) to develop and iteratively test intervention packages against the Local Plan transport objectives and associated Key Performance Indicators (KPIs).

Figure 5-7: Interventions Flow Chart



5.6.2 Informing visioning

Outputs from the GC3M model informed an understanding of the transport issues in the Cotswold District. In addition, the model inputs, such as trip rates, provided an understanding of expected travel behaviours in a scenario where the vision is not realised. Whilst Vision & Validate is not about extrapolating existing trends into the future, the model outputs still have an important role in informing the outcomes described in the vision and transport objectives.

As described in Section 2.6, success factors describing 'what good looks like' were developed for each transport objective and sub-objective, with related key performance

indicators (KPIs). As part of this process, consideration was given to how the model could provide measurable outputs to act as some of the KPIs, for example forecast mode share.

5.6.3 Flag Analysis

Transport modelling played an important role in identifying the infrastructure, services and behaviours needed to realise the vision under different spatial options. Following the forecasting of the PSO, a 'flag' analysis was undertaken to identify locations where Local Plan growth may result in transport impacts requiring intervention. The analysis compared the 2043 Core Minus Scenario with the Preferred Spatial Option to identify changes in network performance attributable to the Local Plan growth.

The flag analysis considered a range of transport metrics across highway, public transport and active travel. Table 5-4 summarises the flag analysis metrics used in the assessment.

Table 5-4: Flag Analysis Metrics

Mode	Metrics	Source
Active Modes	Actual flow by vehicle type	GC3M
	% HGVs	Derived from above
	Vehicle speeds	GC3M
Bus Service	Route journey times by scenario (including link and junction delays)	GC3M VISUM
	Frequencies	GC3M/GTFS
Rail	Change in traffic flow at level crossings	GC3M & National Rail station facilities design guidance
	Change in annual passengers causing a change to station category	GC3M & ORR station demand estimates
	Annual Station Patronage change	GC3M & ORR station demand estimates
Highway	Maximum queue length on SRN slips	GC3M
	Slip Road queue length as a % of capacity	GC3M
	v/c	GC3M
	Delays	GC3M

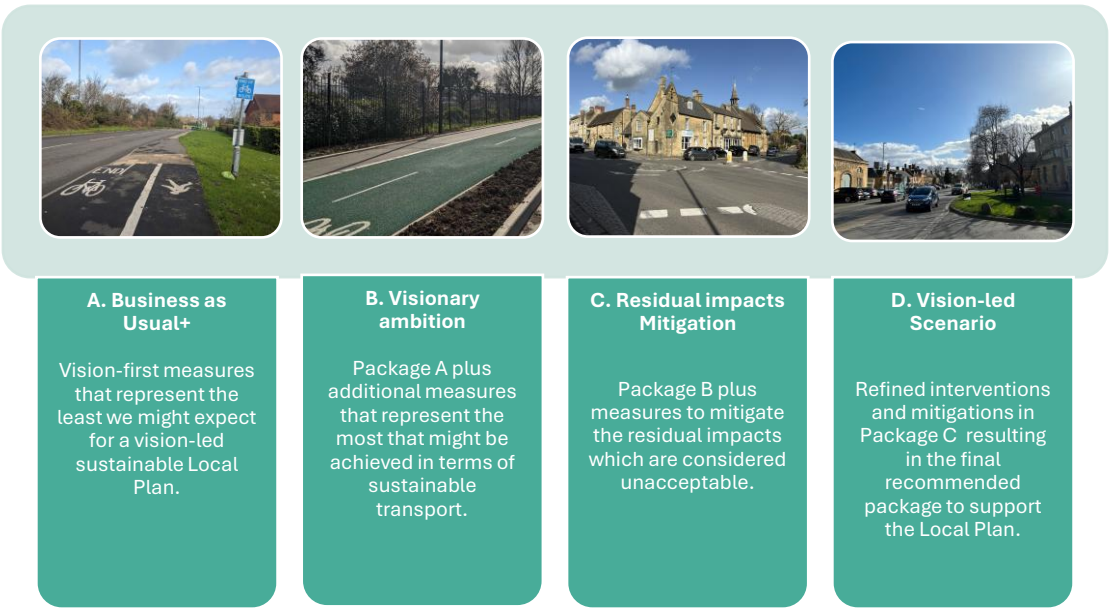
The flag analysis provided an evidence base for identifying potential intervention locations. These findings were considered alongside the Vision and Validate objectives and the Multi Criteria Assessment Framework (MCAF) to inform the development of the intervention packages, which were subsequently tested and refined through an iterative modelling process.

5.7 Intervention package testing and refinement

Three intervention packages were developed and assessed through an iterative modelling process (see Figure 5-8). Package A (Business as Usual+) represented the minimum level of vision-led intervention. Package B (Visionary Ambition) built upon Package A by introducing additional sustainable transport measures to maximise progress towards the Local Plan transport vision. Following the assessment of each package, the PSO was reviewed against the Local Plan transport objectives, Key Performance Indicators (KPIs) and flag analysis metrics to identify any remaining transport impacts requiring intervention.

Where residual impacts remained following the assessment of Package B, a third package was developed. Package C comprised the critical and essential measures from the Visionary Ambition package together with targeted highway mitigation measures to address the remaining impacts on network operation. Package D (Vision-Led Scenario) was developed following the refined PSO. It refined the interventions in response to the modelling results, stakeholder feedback and minor changes to the spatial strategy, resulting in the final recommended package of transport interventions to support the Local Plan.

Figure 5-8: Intervention Packages



5.8 Approach to forecasting effects of the interventions

The impact of the remaining intervention package was assessed collectively, but different approaches were taken for modelling the interventions in the package based on the type of intervention. The approaches were:

- **Assume already captured:** Some interventions were assumed to be necessary to deliver the accessibility and access requirements inherent in the trip rates. Our approach avoids double counting their impacts.
- **Code into VDM:** Used for interventions expected to be significant enough to have meaningful impact within the VDM, for example: new bus routes, altered bus frequencies, bus priority measures, or longer-distance greenways.
- **Adjust trip rates:** Since the modelling contains no internalisation, some interventions are assumed to alter the trip rate classification of a site, representing the generation of fewer trips. This approach was used for interventions which deliver significant on-site services such as schools, retail and GPs. This was only applied for sites classified to have the greatest trip rates (Village), with a shift to the next smallest category (Residential Isolated).

- **Adjust mode shares:** Interventions aimed at improving the overall quality and attractiveness of the active travel network were incorporated into mode-specific networks surrounding strategic-scale development sites. Their impact on the mode share of trips generated by each site was assessed and represented through post-VDM mode share adjustments. These mode share adjustments are based on the STB Carbon Assessment Playbook methodology. This is an online industry leading tool developed by City Science, WSP and Steer for the Sub-national Transport Bodies. The Playbook provides an evidence-based assessment of the impacts of transport interventions on travel behaviour, accounting for place-specific characteristics and existing travel patterns. It has been used to derive distance-dependent trip rate adjustment factors based on the intervention. These adjustments are only applied to short-distance trips, with mode share shifts ranging between 0.5% and 0.7% for eligible trips.
- **Withhold until later testing:** In line with the vision & validate approach, the intervention testing at this stage focuses on the impact of the vision-led interventions. Highway mitigations will be subsequently considered for mitigating unacceptable residual impacts of the Local Plan on highway operations.

6. The preferred spatial option

6.1 Introduction

The Preferred Spatial Option (PSO) is a set of residential, employment and mixed-use sites which are proposed to be included in the Local Plan. It is in these sites that new development is primarily expected to occur. In aggregate, these sites are planned to provide:

- sufficient land to accommodate the housing requirement for the 2025 - 2043 plan period of 18,859 homes; and
- sufficient land for the forecast employment need (79.68 hectares).

Background to the local plan work is described in Section 0.

6.2 Local Plan settlements

The PSO sets out a strategy involving predominantly targeted, planned expansion of existing settlements within the Cotswold district. Alongside this, several smaller scale development sites are dispersed across the district. The housing and employment figures, and distribution across strategic sites, are indicative assumptions used to inform the analysis. Although these assumptions are considered sufficiently robust for the purpose of this assessment, they are not intended to represent definitive site capacity or final development s proposals and may be refined through subsequent stages of planning.

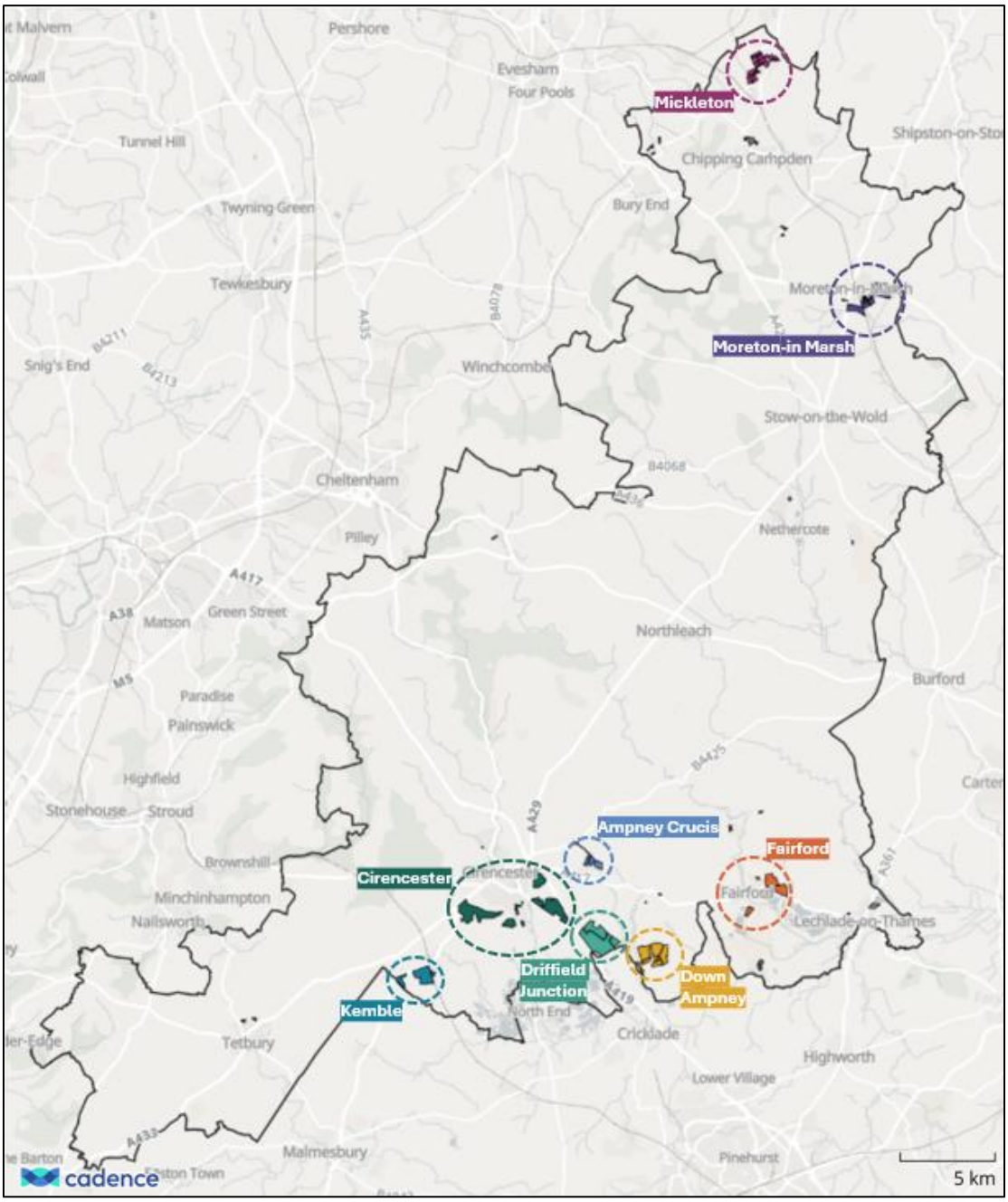
Table 6-1 below shows the number of dwellings and the amount of employment land by settlement. Figure 6-1 presents the locations of the development sites by location.

Table 6-1: Dwellings and employment land in PSO by location

Location	Number of dwellings	Employment land (ha)
Ampney Crucis	660	-
Cirencester *(including Preston and Siddington)*	2,766	13.7
Down Ampney[8]	1,670	-
Driffield	1,090	10
Fairford	1,387	4
Kemble	1,020	27.03
Mickleton	1,413	1
Moreton-in-Marsh	1,972	5.5
Other settlements	6,881	9.65
Existing commitments	-	9.1
All sites	**18,859**	**79.68**

[8] It should be noted that the Ampney Crucis site has been included within the modelling assessment to provide a robust presentation of the potential transport impacts associated with the wider strategy. However, the development site at Ampney Crucis is not proposed as an allocation within the Regulation 19 Local Plan.

Figure 6-1: Locations of housing development sites by settlement



Since the modelling was undertaken, there have also been refinements to the transport strategy presented in the Regulation 19 Local Plan. As such, the modelling results provide an indication of the likely transport outcomes associated with the proposed development strategy, although the reported impacts may represent a more conservative scenario than would be expected from the final strategy.

6.3 Current accessibility of PSO sites

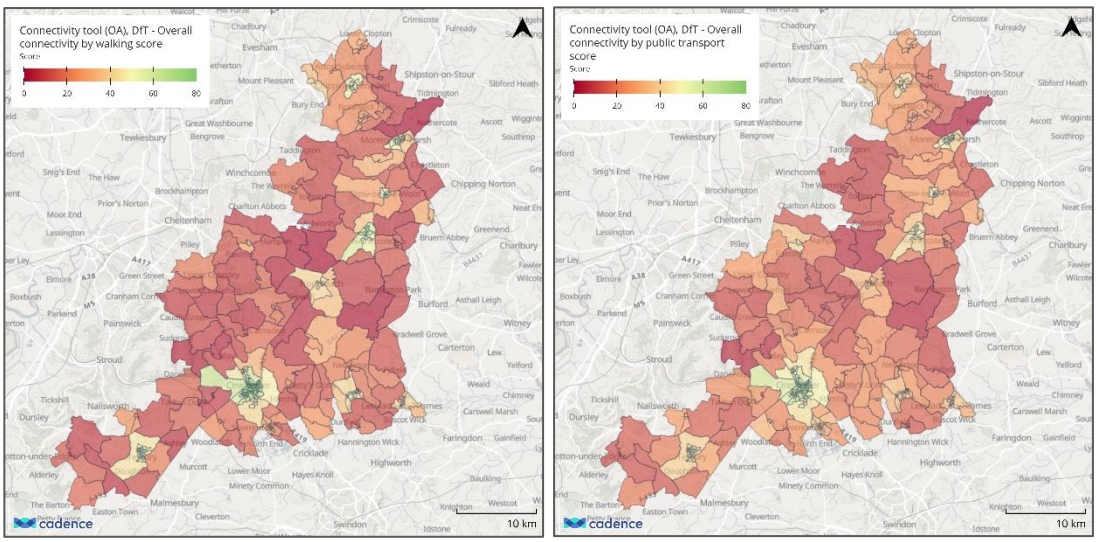
The Local Plan vision for transport is to maximise the sustainability of the development sites using the Avoid/Shift/Improve philosophy and the sustainable transport hierarchy (see Section 2.3 for details). An important consideration to achieving this vision is to locate new development as close as possible to existing amenities, such as schools, shops and jobs, and to existing public transport and active travel networks. By making walking, cycling, wheeling and public transport more attractive, residents and employees have greater choice in how they travel, and to do so sustainably.

The current accessibility of the PSO sites on foot and by public transport is shown in Figure 6-2. The data shows 'overall accessibility' to all destinations included in the DfT Connectivity Tool (business, education, employment, healthcare and leisure & community). The best-connected place in England and Wales has a score of 100, with other locations scored relative to the best-connected place.

In the Cotswold District, walking scores range from 70-80 in the largest settlement, Cirencester, to below 10 in the most rural areas. Other urban centres in the district are typically between 50-60, which are in the lowest 20-40% of locations in England and Wales.

Public transport scores are 60-70 in Cirencester but 40-50 in the other settlements, such as Moreton-in-Marsh and Mickleton. Fairford stands out with public transport scores below 40 across the settlement. As with the walking scores, in the most rural areas scores fall below 10. A public transport score of below 60 means that location is in the bottom 30% in England and Wales, and a score of below 40 in the bottom 10%. This clearly demonstrates most places in the district are poorly connected by public transport relative to the average of England and Wales.

Figure 6-2: Current accessibility by walking and public transport



6.4 Site context

This section describes the PSO sites covering:

- The approximate number of dwellings and/or amount of employment land (for modelling purposes);

- the location of the sites within the settlement, and the strategic context, for example proximity to neighbouring communities and facilities.

6.4.1 Cirencester

The Cirencester growth area, which includes the settlements at Siddington and Preston, comprises sites in and around the district's main settlement and plans to deliver a total of 2,766 dwellings and 13.7 hectares of employment land. The sites occupy a highly sustainable location on the southern and eastern edges of Cirencester, adjacent to existing residential areas and close to key services, employment opportunities, schools, healthcare provision and strategic transport corridors.

Central Cirencester sites:

- Steading southern extension (585 dwellings & 1.7 employment hectares)
- Land adjacent 'Donside', off Barn Way (10 dwellings)
- Land west of Gardner Way (31 dwellings)

Preston sites:

- Land southeast of Cirencester and south of Preston (1,084 dwellings)
- Land east of Kingshill Lane (613 dwellings & 1 employment hectare)
- Land south-west of Preston (10 employment hectares)

Siddington sites:

- Land southwest of Siddington (381 dwellings)
- Plummers Farm, east of Ashton Road (35 dwellings)
- Land east of Siddington Road (5 dwellings)

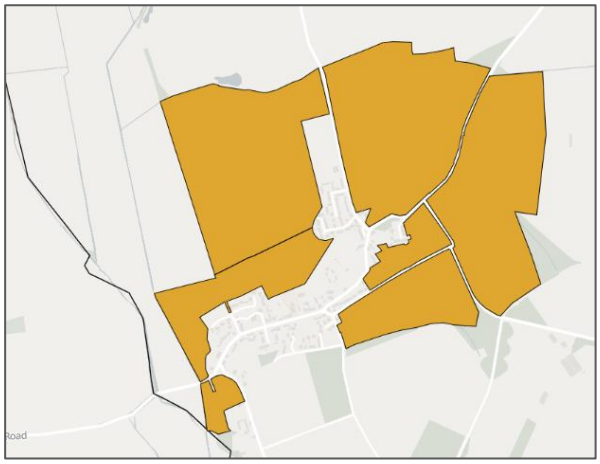
- Land between disused canal and disused railway line, north of Park Way (22 dwellings)
- Land north of Clark's Lane and south of Old Canal (1 employment hectare)

6.4.2 Down Ampney

Down Ampney has a development site of approximately 1,670 dwellings. It represents a key strategic allocation that would significantly expand a small rural village. The village currently has a small number of services, including a small shop and a primary school, and has relatively limited active travel and public transport connections to the services in Cirencester.

It comprises the following major sites:

- Land at Rooktree Farm (77 dwellings)
- Down Ampney Airfield (Site A) (243 dwellings)
- Castle Hill Farm (Site A) (390 dwellings)
- Land between Poulton Road and Meysey Hampton Road (450 dwellings)
- Land north of Down Ampney (Site A) (320 dwellings)
- Land north of Chestnut Close and Suffolk Place (180 dwellings)
- Land west of Church Lane (10 dwellings)



6.4.3 Ampney Crucis

Ampney Crucis is a small village located approximately 3 miles east of Cirencester. It has a proposed single site development of 660 dwellings, doubling the current population of the village. The development includes improved highway access to the B4425, providing connections to Cirencester and the surrounding network. Beyond this proposed access, the village has relatively limited transport infrastructure and a restricted range of local services.

It comprises the following major site:

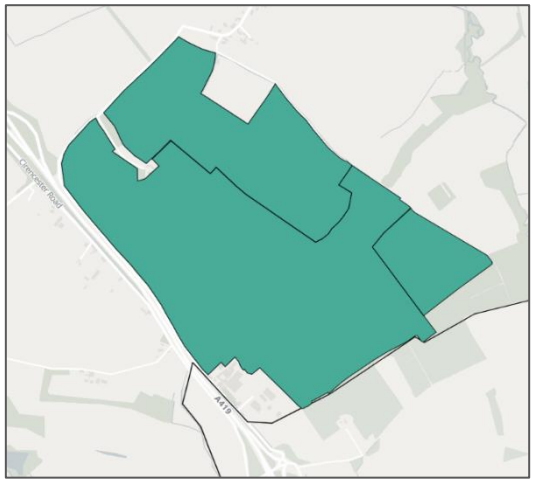
- Land north of Ampney Crucis (660 dwellings)

6.4.4 Driffield

Driffield has a proposed allocation of approximately 1,090 dwellings alongside 10 hectares of employment land, representing a substantial addition to a small settlement with limited existing services. It relies on connections to Cirencester for access to key services. Local road connectivity feeds into the A417/A419 network, offering reasonable regional road connectivity but causing a reliance on private cars for daily trips. Active and public transport is limited as the site is constrained by A417 along its western border.

It comprises the following major sites:

- Fosse Farm (475 dwellings & 10 employment hectares)
- Land south of Driffield (405 dwellings)
- Land north of The Folly (210 dwellings)

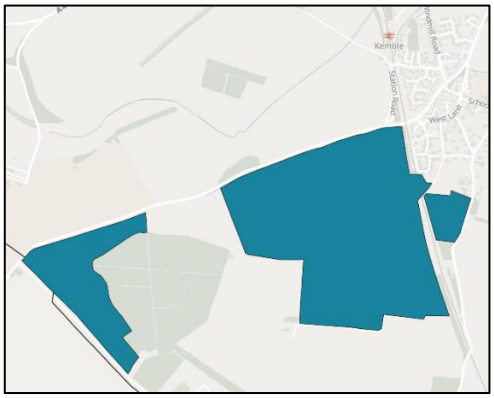


6.4.5 Kemble

Kemble has a proposed allocation of approximately 1,020 dwellings, alongside an additional 27.03 hectares of employment land assumed in the Kemble area. The development would roughly triple the existing scale of the village community. Local amenities in Kemble are currently limited, with a reliance on connections to the neighbouring settlements of Cirencester and Tetbury for a wider range of services. Distinct from other rural developments in the district, the site benefits from strategic public transport connectivity through Kemble Railway Station, with direct mainline links to London, Swindon, and Gloucester.

It comprises the following major site:

- Land south-west of Kemble (1,020 dwellings)

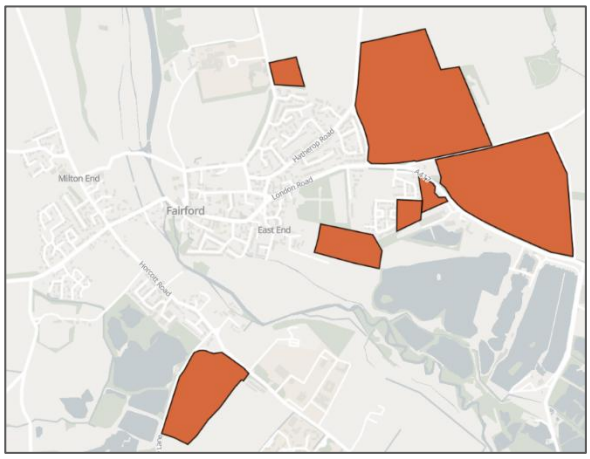


6.4.6 Fairford

Fairford has a proposed allocation of approximately 1,387 dwellings, alongside 4 hectares of employment land. The proposed development is broadly comparable in scale to the existing town, forming a major urban extension to an established settlement. Fairford has a range of services, including a town centre with independent retail shops, primary and secondary schools, and a GP surgery. Strategic access is via the A417 corridor, providing links to Cirencester and Lechlade, although local junctions may experience capacity constraints during peak periods. However, transport options are limited, with no rail access, only moderate-frequency bus services, and limited cycling infrastructure to nearby employment areas.

It comprises the following major sites:

- Land north-east of Fairford (1,108 dwellings & 4 employment hectares)
- Land south-east of Fairford (109 dwellings)
- Land west of Terminus Cottage and Station Cottage (20 dwellings)
- Land at Totterdown Hill, Horcott (150 dwellings



6.4.7 Moreton-in-Marsh

In the north of the Cotswold District, Moreton-in-Marsh has a proposed allocation of approximately 1,972 dwellings and 5.5 hectares of employment land. Moreton-in-Marsh acts as the primary service hub for the North Cotswolds, with a strong town centre, supermarkets, a community hospital, and established primary schools. The sites also benefit from the railway station, providing strong strategic public transport links, while road access via the A44 and Fosse Way (A429) offers good regional connectivity.

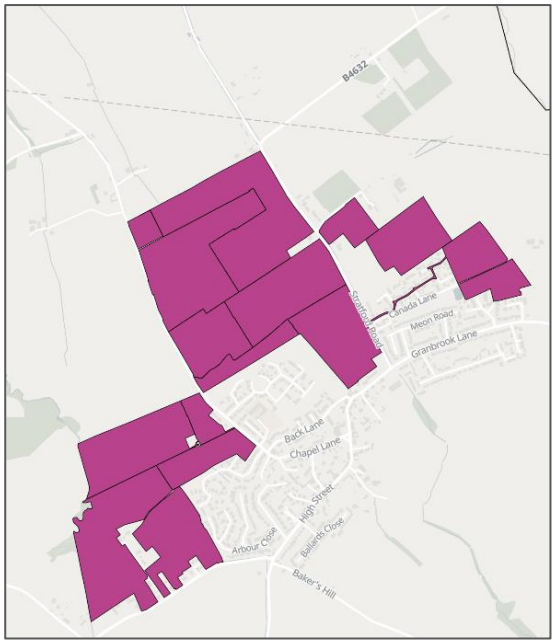
It comprises the following major sites:

- Fire Service College (638 dwellings and 4 employment hectares)
- Land east of Cotswold Business Village (195 dwellings)
- Land south of Fire Service College (485 dwellings)
- Dunstall Farm, Fosseway (644 dwellings)
- Land west of Aldi (10 dwellings)
- Land south of Moreton-in-Marsh (1.5 employment hectares)

6.4.8 Mickleton

Mickleton has a proposed allocation of approximately 1,413 dwellings, alongside 1 hectare of employment land. The proposed development would double the size of the village. The sites benefit from strategic road access, provided via the B4632, supporting wider regional travel. Public transport provision is limited in Mickleton, relying mainly on infrequent bus services. Active travel is also constrained by the rural setting and the village's location at the northern edge of the district, resulting in a high reliance on private car use for trips beyond the immediate area.

It comprises the following major sites:



- Land at Prospect Gardens (109 dwellings)
- Land south-west of Mickleton (71 dwellings)
- Glebe Land, Broad Marston Road (109 dwellings)
- Land east of Broad Marston Road (109 dwellings)
- Meadow View (109 dwellings)
- Field adjoining Market Garden Close, Broad Marston Road (109 dwellings)
- Land west of Stratford Road (109 dwellings)
- Land south-west of Mickleton (33 dwellings)
- Land west of nurseries on Broad Marston Road (147 dwellings)
- Land north of Broadway Road and east of Norton Brook (179 dwellings)
- Land north-east of Mickleton (40 dwellings)
- Land between Summerville Ltd. and Stratford Road (33 dwellings)
- Land east of Stratford Road (76 dwellings)
  Land at Prospect Gardens (1 hectare of employment)

6.5 Forecast impacts of the PSO without intervention

6.5.1 Introduction

The forecasted impacts on the travel network as a result of the developments with the PSO were assessed. The focus was on the additional trips generated on the highway network, their routing and impacts of this traffic on network performance with regard to:

- attractiveness of the highway network for use by active modes; and
- delays and congestion affecting general traffic and bus services.

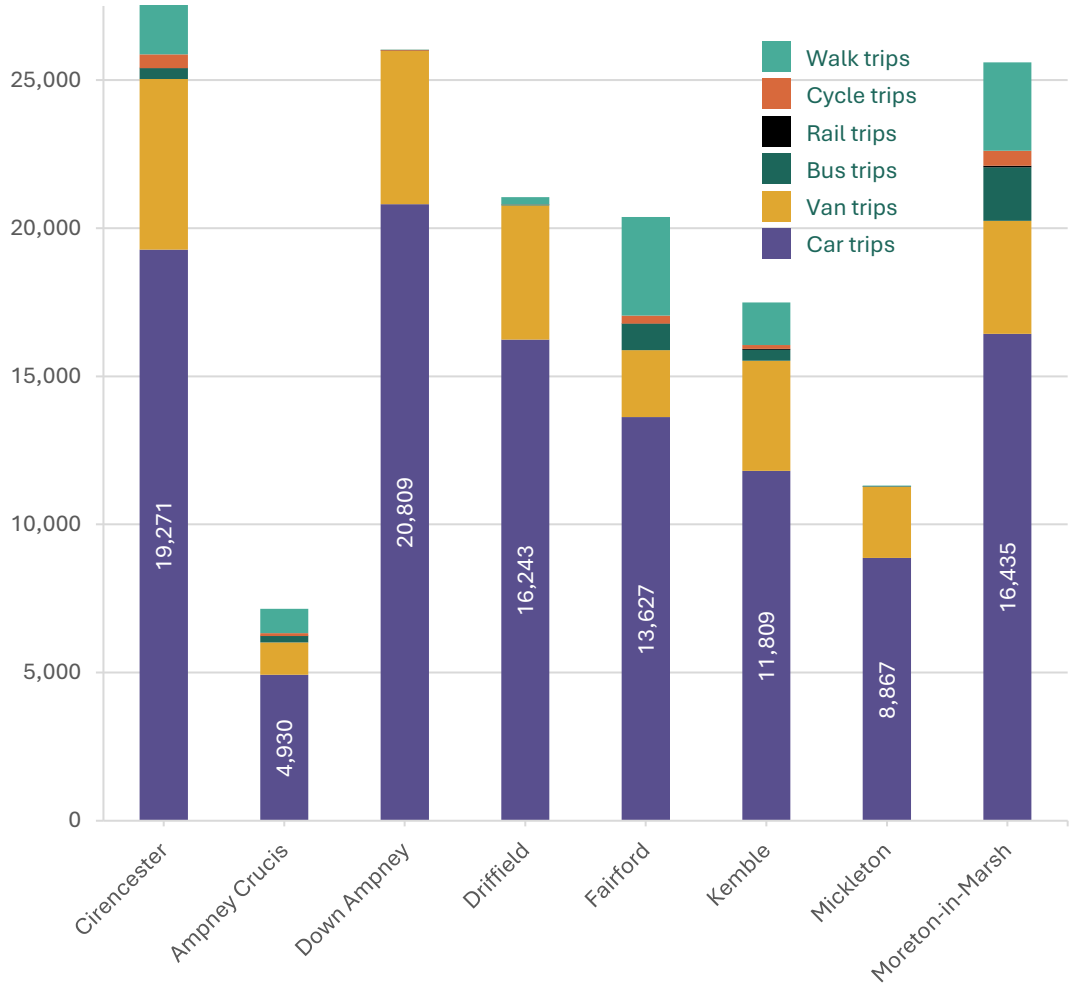
To isolate the impacts of the proposed PSO growth from committed development, the assessment compares the PSO scenario against the Core Minus scenario (both defined in Section 5.4. This comparison identifies cumulative network pressures and pinpoints where the PSO sites introduce specific, additional pressure beyond that already anticipated under the Core Minus scenario.

These findings expand the evidence base needed to target transport interventions and mitigation measures precisely where the proposed development impacts network operation most heavily. The vision-led interventions go beyond traditional mitigation measures by proactively addressing transport impacts through measures that support mode shift, improve sustainable travel options, and enhance network resilience. As a result, they provide a more comprehensive approach to managing development-related impacts and supporting the long-term operation of the transport network.

6.5.2 Changes in overall amount of trip-making

The introduction of the PSO development sites generates additional trips across the Cotswold District. Sites comprising more than 500 dwellings were represented as separate zones within the GC3M, allowing their trip generation and network impacts to be isolated. While the assessment considers the impacts of the PSO development in its entirety, Figure 6-3 illustrates the additional trips associated with these major development sites, aggregated by settlement. Collectively, the modelled sites are forecasted to result in an additional 157,600 trips across the district. Over 70% of these additional trips are taken by car. The main settlements of Cirencester and Moreton-in-Marsh contribute a large proportion of these trips, as well as the strategic sites at Down Ampney and Driffield.

Figure 6-3: Total number of trips to/from the PSO sites (without intervention) by settlement (during a weekday 12-hour period)



6.5.3 Impacts on active travel

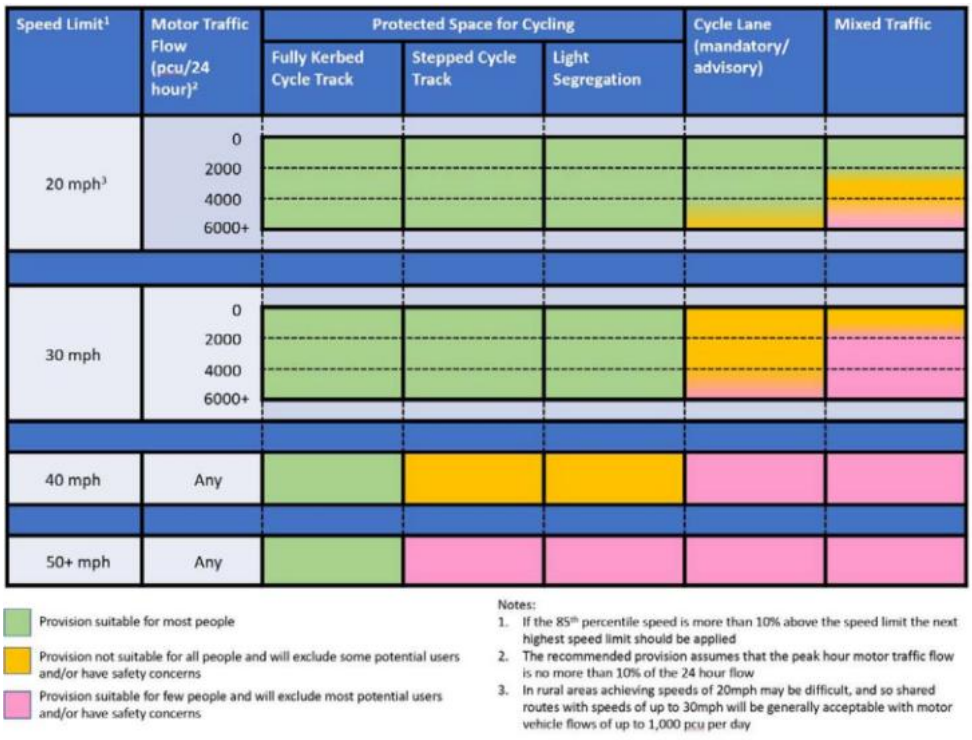
6.5.3.1 Approach

To understand the potential impacts of the PSO on active travel, without intervention, all modelled links were assessed in terms of whether they offer appropriate protection from motor traffic. The factors considered were:

- The type of cycle infrastructure in place (from no provision to fully kerbed cycle track)
- The speed limit
- The traffic volume (from GC3M); and
- The proportion of HGVs (from GC3M).

Links were classified as having adequate protection based on Figure 4.1 of LTN 1/20 (reproduced in Figure 6-4)

Figure 6-4: Appropriate protection from motor traffic on highways



Reproduced from LTN1/20 Figure 4.1

The LTN1/20 guidance was combined with the change in motor traffic flow between the Core Minus scenario and the PSO, to determine which modelled links on the highway network become unsuitable for active travel due to Local Plan Growth. The thresholds are presented in Table 6-2 below.

Table 6-2: Active travel flag analysis

Change In Motor Traffic Flow (between Core Minus and with PSO)	Change in RAG Rating for LTN /120 (using traffic flow, traffic speeds and AT infrastructure)			
	No Detriment	Green to Amber	Amber to Red	Green to Red

Less than 5% Change	Low	Low	Low	Low
5% to 10% Increase	Low	Medium	Medium	High
More than 10% Increase	Low	High	High	High

6.5.3.2 Forecast impacts of the PSO on active travel

The assessment indicates that only a small proportion of the highway network in the Cotswold District is forecast to be suitable for active travel users under the Core Minus scenario (Figure 6-5). The inclusion of Local Plan growth in the PSO scenario results in some routes in the district flagging as 'high' impacts for active travel users. Key routes include Lewis Lane in the centre of Cirencester, as well as Somerfield Road and Sparsgate Lane, connecting the Siddington developments to the centre of Cirencester.

Near Mickleton, Bakers Hill/Hidcote Road additionally flags as high impact. In Fairford, the High Street, Park Street and Leafield Road flag as high risk for active travel users under the PSO scenario.

The findings suggest targeted interventions will be required to improve active travel connectivity, particularly for local trips in and around the developments.

Figure 6-5: Active travel flags on the highways network under the PSO

6.5.4 Impacts on public transport

6.5.4.1 Approach

Public transport impacts were assessed separately for rail stations and bus service impacts using the flag analysis approach introduced in Chapter 5. Rail impacts were assessed by

forecasting annual station patronage and identifying whether the resulting additional PSO demand would lead to a change in station category (at either Kemble or Moreton-in-Marsh). The flag analysis criteria for railway stations are presented in Table 6-3below and are based on the railway station categories defined in the Network Rail Station Facilities and Amenities Design Guidance (Figure 6-6). A change in station category indicates that the existing level of facilities may no longer be appropriate for the forecast demand and is therefore identified as a flag for further consideration, in parallel to the vision-led considerations.

Table 6-3: Rail Flag Analysis Criteria

			Station Type Category based on Annual Station Patronage					
			F	E	D	C	B	A
Change in annual passengers causing a change to station category	Change from F	Low	Low	High	High	High	High	High
	Change from E	Medium	n/a	Low	High	High	High	High
	Change from D	High	n/a	n/a	Low	High	High	High
	Change from C	High	n/a	n/a	n/a	Low	High	High
	Change from B	High	n/a	n/a	n/a	n/a	Low	High
	Change from A	High	n/a	n/a	n/a	n/a	n/a	High

Figure 6-6: Rail Station Type Categories

	No.	Type	Criteria per annum
A	28	National Hub	Over 2m trips: over £20m
B	67	Regional Interchange	Over 2m trips: over £20m
C	248	Important Feeder	0.5–2m trips: £2–20m
D	298	Medium Staffed	0.25–0.5m trips: £1–2m
E	695	Small Staffed	Under 0.25m trips: Under £1m
F	1,200	Small Unstaffed	Under 0.25m trips: Under £1m
Total	2,536		

Bus service impacts were assessed by comparing changes in end-to-end bus journey times between the 2043 Core Minus Scenario and the Preferred Spatial Option and the resultant impact on bus service frequencies (i.e. buses per hour). Frequency in this instance has been used as a proxy for bus passenger demand. Flag thresholds are presented in Table 6-4. A high impact was identified where end-to-end bus service journey times increased by more than 5 minutes or where the forecast impact resulted in a reduction of two or more bus services per hour. The 5 minute threshold comes from liaison with GCC's integrated transport team and rules set out nationally by the traffic commissioner as definition of a late running bus service.

Table 6-4: Bus Flag Analysis Criteria

		Impact on bus service vehicles/frequency		
		no frequency change	1 less bus per hour	>2 less buses per hour
Change in bus route end to end journey times (between Core Minus and PSO)	0-5 mins	Low	Medium	High
	5-10 mins	High	High	High
	>10 mins	High	High	High

6.5.4.2 Forecast impacts of the PSO on public transport

Rail impacts were assessed by forecasting annual station patronage for the two stations within the Cotswold District, Moreton-in-Marsh and Kemble. Forecast patronage was derived using a combination of TEMPro growth and additional demand associated with the Local Plan PSO development.

According to the latest Office of Rail and Road (ORR) station usage statistics (April 2024 to March 2025), both Moreton-in-Marsh and Kemble stations currently record fewer than 0.5 million annual passenger entries and exits, placing them within Station Category D (medium staffed station). Although forecast patronage increases under the Preferred Spatial Option, both stations remain below the 0.5 million passenger threshold and therefore remain within Category D. Consequently, no rail flag was identified.

Table 6-5: Forecast growth in rail station patronage

Station	2024 Patronage	2024 Station Category	2043 Patronage	2043 Station Category
Kemble	444,760	D	480,085	D
Moreton-in-Marsh	375,804	D	396,447	D

Bus service impacts were assessed by comparing changes in end-to-end bus journey times between the 2043 Core Minus Scenario and the Preferred Spatial Option and the resultant impact on bus service frequencies (i.e. buses per hour) as mentioned in the approach section. The assessment identified increased journey times on a small number of bus services, while no reductions in service frequency were forecast. The services identified as having a high impact were Route 51X (Swindon-Cirencester), Route 50 (Cirencester town service), Route 99 (Cheltenham-Gloucester), Route 606 (Cheltenham- Chipping Campden) and Route 93 (Crudwell-Cirencester).

A link-by-link review of these routes was undertaken to identify the locations contributing to the increased journey times. The analysis showed that the affected links coincide with highway congestion hotspots, reflecting the increased traffic demand associated with the Local Plan. These findings are consistent with the highway volume-to-capacity and delay assessments presented in the following section.

6.5.5 Impacts on delays and congestion affecting highway traffic

6.5.5.1 Approach

To understand the potential highway impacts of the PSO, an assessment of the operational performance of the highway network was undertaken for both the Core Minus scenario and the PSO scenario. The assessment drew on GC3M-based outputs for these scenarios, specifically:

- forecast differences in traffic flows between the Core Minus Scenario and the PSO
- forecast differences in the ratio of traffic volume and capacity ('V/C') of links and nodes; and
- where forecast increases (in the PSO scenario with respect to the Core Minus scenario) in traffic delay

Flow difference plots were used to identify the locations where Local Plan growth generates additional traffic on the highway network, while the V/C and delay assessments were used to determine whether these changes result in operational issues.

6.5.5.2 Forecast impacts of the PSO on traffic flows

Figure 6-7 and Figure 6-8 represent the forecast difference in traffic flows between the PSO and the 2043 Core Minus Scenario during the morning and evening peak hours. The plots highlight the redistribution of traffic associated with Local Plan growth with the greatest increases generally occurring on routes serving the proposed development sites.

The largest increases in traffic flow are concentrated around Cirencester, particularly along the A419 and A417 corridors, the A429 between Cirencester and Kemble, and the A417 London Road corridor serving both Cirencester and Fairford. Additional traffic is also evident on routes serving Moreton-in-Marsh and the northern part of the district, including the A429 and the A44 London Road.

These increases reflect the distribution of development proposed within the PSO.

Figure 6-7: Forecasted traffic flow difference on links between PSO and Core Minus scenario during morning peak hour (08:00-09:00)

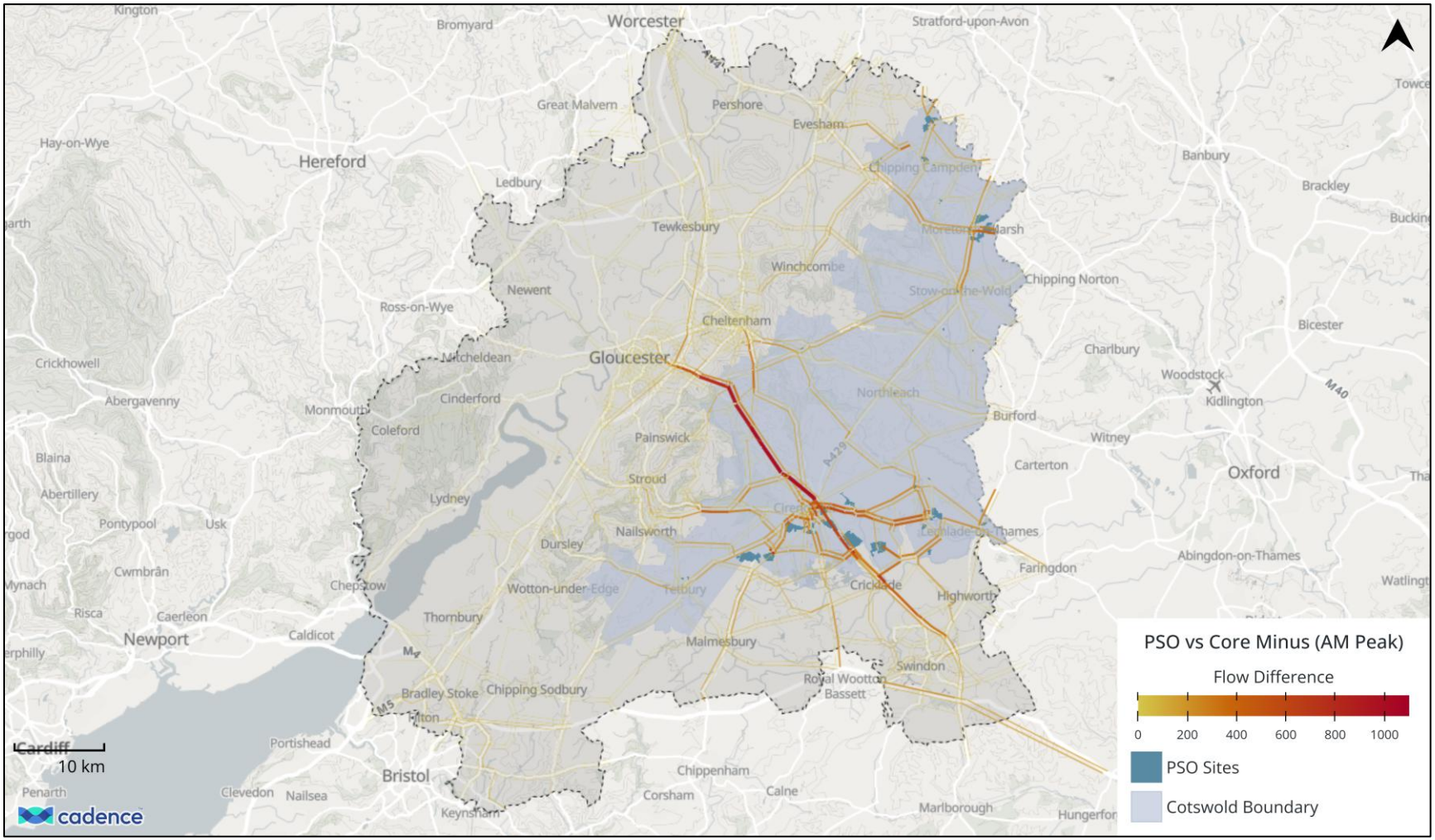
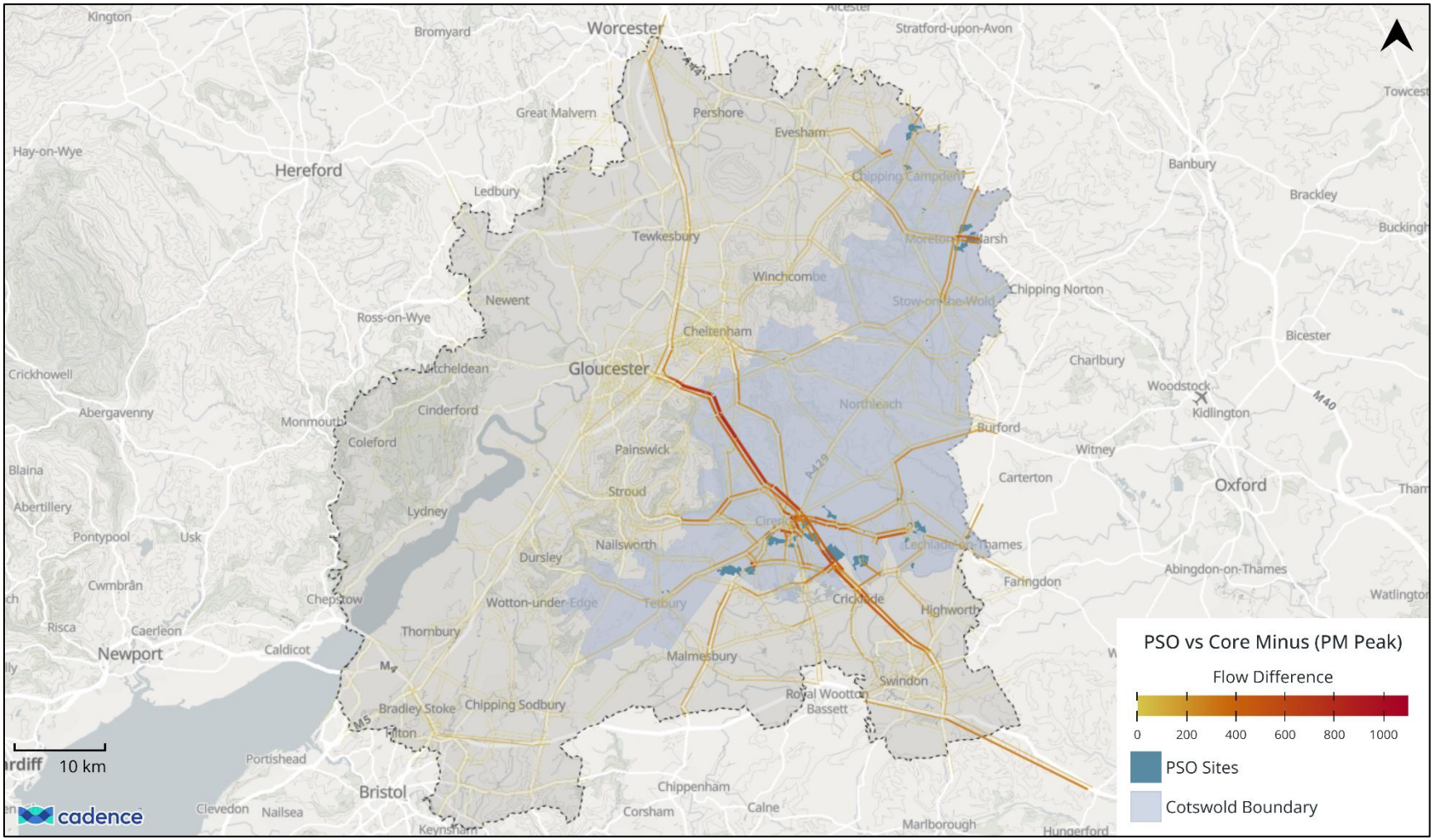


Figure 6-8: Forecasted traffic flow difference on links between PSO and Core Minus scenario during evening peak hour (17:00-18:00)



6.5.5.3 Forecast impacts of the PSO on the ratio of traffic volume and capacity ('V/C')

The modelling outputs show the V/C as a percentage for links on the network. The V/C value shows the forecast modelled flow on a link on the highway network as a proportion of the capacity of that link. A higher V/C value indicates increased congestion. V/C >100% indicates that the link is anticipated to exceed "absolute" capacity.

The model incorporates the capacity at junction stop lines. Some junctions have limited capacity to start with, and V/C is a function of level of capacity and number of vehicles, rather than solely the number of vehicles.

A comparison of modelled link V/C ratios in the Cotswold Core Minus scenario and the PSO in the future year morning peak hour (08:00-09:00) is shown in Figure 6-9. The figures show higher V/C ratios on several key network links in the PSO scenario. The most significant differences in the morning peak hours are on:

- B4081 southbound from Chipping Campden approaching A44/B4081 intersection;
- High street / Oxford Street junction in Moreton-in-Marsh;
- South Cirencester; Somerford Road, A429/Chesterton Lane;
- B4425 approaching A429/B4229 intersection;
- Spine Road East approaching Station Road/Cerney Wick Lane Intersection;
- High Street approaching a417 Roman Road

Figure 6-9: Forecasted PSO vs Core Minus volume to capacity ratio on links during morning peak hour

Core Minus Scenario

PSO

6.5.6 Delay and V/C ratio 'flag' analysis

6.5.6.1 Approach

In addition to assessing links and nodes with significantly worsening performance (above) a separate analysis identified ('flagged') links and nodes forecast to have:

- a large increase in V/C of more than 5% between the Core Minus scenario and the PSO scenario, resulting in a delay of greater than 100%; or
- a large increase in delay of more than 5% between the Core Minus scenario and the PSO scenario, resulting in a delay exceeding 5 minutes

Traffic volume changes of less than 20 vehicles or 1% between the Core Minus and PSO were screened out.

Figure 6-10 shows how these two factors were used to determine if the impact of the PSO without intervention should be rated as 'low', 'medium' or 'high'.

Figure 6-10: Derivation of ratings for 'flag analysis'

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	Low	Low	Medium
	5 to 10%	Low	Medium	High
	Over 10%	Low	Medium	High

		Resultant delay (in PSO scenario)		
		1-2 mins	2-5 mins	5 mins +
Increase in delay	Less than 5%	Low	Low	Medium
	5 to 10%	Low	Medium	High
	Over 10%	Low	Medium	High

Links and junctions rated as 'high' are those where additional traffic associated with the PSO could have a significant impact on the highway network which may require some form of mitigation, such as a junction improvement. Links and nodes rated as 'medium' were also flagged. These represent locations where the PSO is expected to have a noticeable impact on traffic conditions that may require monitoring.

6.5.6.2 Links and nodes flagged as 'high' or 'medium'

Following this assessment, there were several key network pinch points that flagged as high or medium for exceeding their operational capacity or delays.

Table 6-6 to Table 6-9 summarise the V/C and delay flag assessment results for highway links and junctions during the AM and PM peak hours.

The V/C assessment identified 13 high-impact locations during the AM peak hour and 10 during the PM peak hour. For the delay assessment, only one high-impact link or node was identified during the AM peak hour, increasing to two during the PM peak hour.

Table 6-6: Summary of link and junction V/C flag assessment results (AM Peak Hour)

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	2647	59	13
	5 to 10%	652	29	1
	Over 10%	715	42	12

Table 6-7: Summary of link and junction V/C flag assessment results (PM Peak Hour)

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	2722	47	10
	5 to 10%	716	25	3
	Over 10%	675	38	7

Table 6-8: Summary of link and junction delay flag assessment results (AM Peak Hour)

		Resultant delay (in PSO scenario)		
		1-2 mins	2-5 mins	5 mins +
Increase in delay	Less than 5%	2454	7	0
	5 to 10%	377	0	0
	Over 10%	1313	18	1

Table 6-9: Summary of link and junction delay flag assessment results (PM Peak Hour)

		Resultant delay (in PSO scenario)		
		1-2 mins	2-5 mins	5 mins +
Increase in delay	Less than 5%	2530	7	0
	5 to 10%	372	1	1
	Over 10%	1315	16	1

Figure 6-11 and Figure 6-12 shows the locations of these links across both peak periods. The assessment focuses on areas where the impacts of the Local Plan are forecast to result in notable changes in network performance, meaning areas where links have flagged 'high' risk. These include:

Cirencester

- A429 approaching A429/Chesterton Lane junction
- Somerfield Road approaching Somerford Road/Chesterton Lane intersection
- Midland Road approaching A429 Watermoor roundabout
- Swindon Road after Cirencester Road/Swindon Road mini roundabout
- Kingshill Lane approaching Swindon Road junction
- Kingshill Lane approaching London Road junction
- B4696 Spine Road Approach to Station Road/Cerney Wick Lane Intersection

- A429 approaching B4425/A429 Stow Road junction

Moreton-in-Marsh

- Oxford Street approaching High St/Oxford St Roundabout
- High Street approaching High St/Oxford St Roundabout

Other areas for consideration:

- A4135 New Church St approaching A433 by Tetbury
- B4081 approaching A44/B4081 intersection
- Roads approaching A429 Fosse Way /A436 Sheep Street by Stow-on-the-Wold
- Stow-on-the-Wold High Street approaching Roman Road

Figure 6-11: Link flagging as 'high' or 'medium' risk for V/C under the PSO

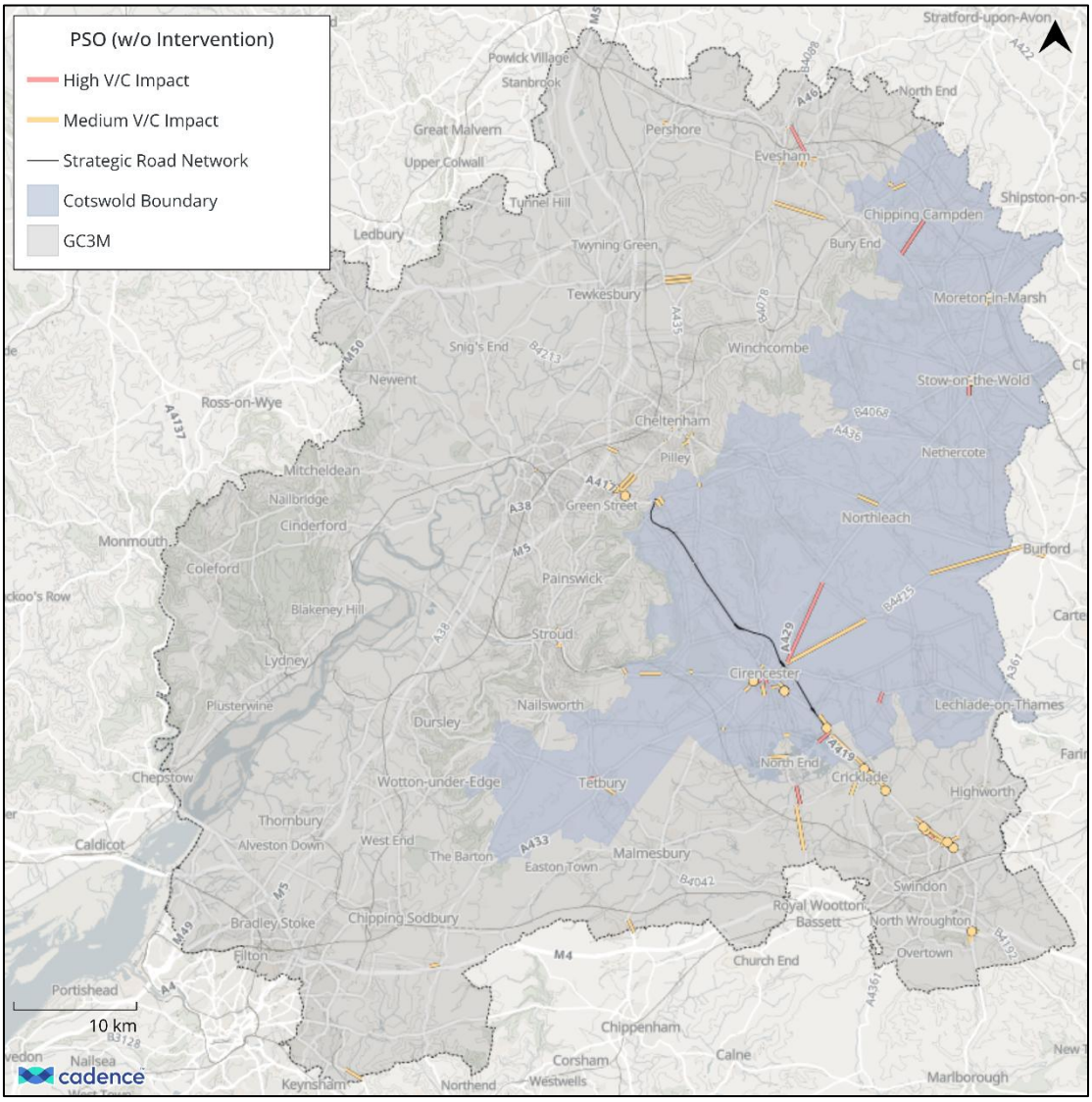
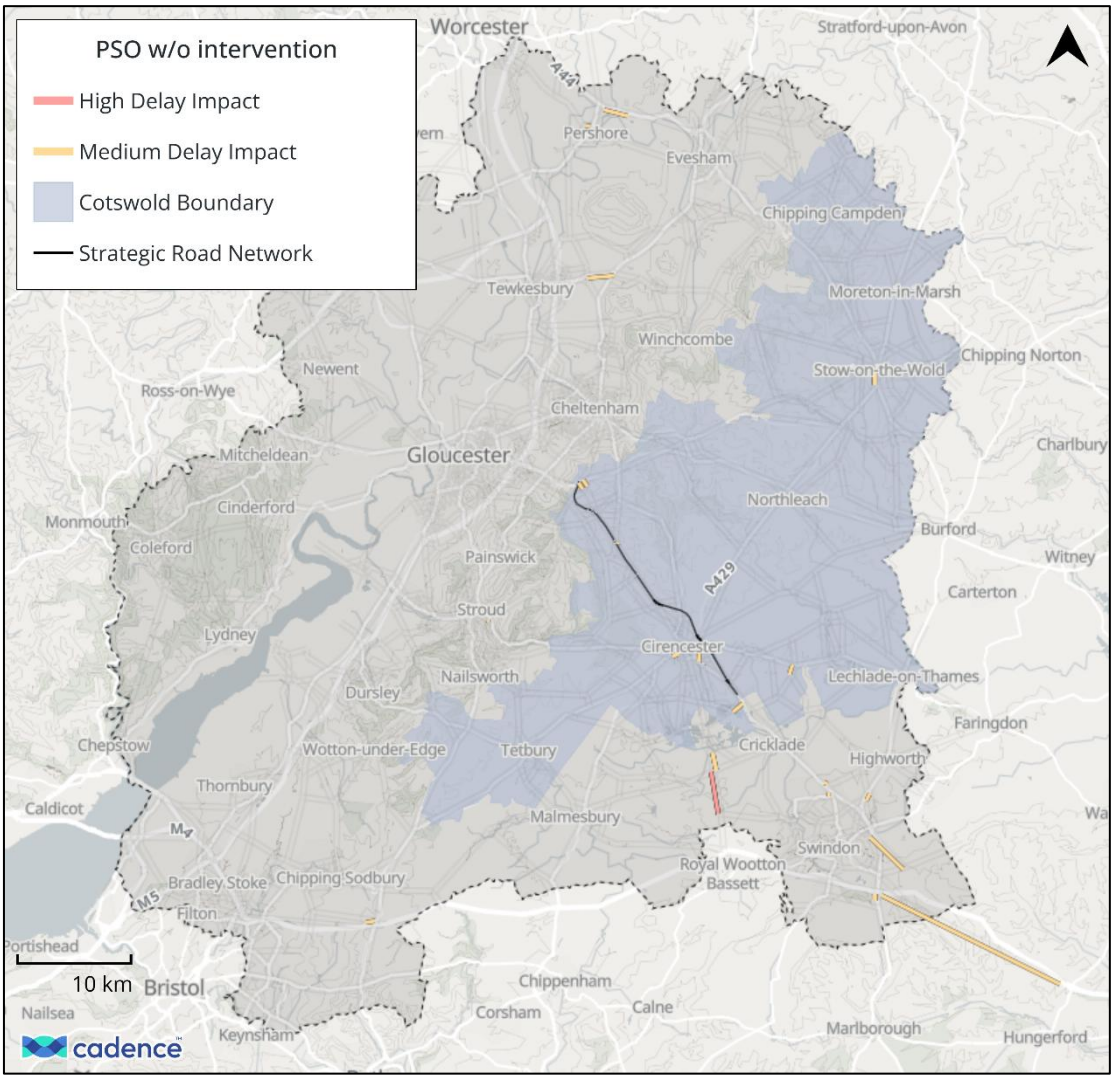


Figure 6-12: Link flagging as 'high' or 'medium' risk for delay under the PSO



The high risk locations have been considered further within the development of interventions and highways mitigations.

6.5.6.3 Highways Operational safety

In addition to the link and node V/C assessment described above, an operational safety flag analysis was undertaken for the Strategic Road Network (SRN), focusing on slip road queuing and operational capacity.

A location was flagged as high risk if

- a large increase in V/C of more than 5% between the Core Minus scenario and the PSO scenario, resulting in a delay of greater than 100%; or
- the change in the maximum SRN slip road queue length between the Core Minus and PSO scenarios exceeded 50 m, and the resulting slip road queue length (expressed as a percentage of link capacity) exceeded 100%.

Traffic volume changes of less than 20 vehicles or 1% were screened out.

Figure 6-13 shows how these two factors were used to determine if the impact of the PSO without intervention should be rated as 'low', 'medium' or 'high'.

Figure 6-13: Derivation of ratings for operational safety 'flag analysis'

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	Low	Low	Medium
	5 to 10%	Low	Medium	High
	Over 10%	Low	Medium	High

		Slip road queue length (as a % of link capacity)		
		Below 85%	85 to 100%	Over 100%
Change in slip road maximum queue length	Less than 50m	Low	Low	High
	50m to 400m	Low	Medium	High
	Over 400m	Low	Medium	High

Following this assessment, no SRN slip road locations were found to flag as medium or high risk for either queue length change or resultant V/C, in either the AM or PM peak period. On this basis, no operational safety concerns relating to SRN slip road queuing have been identified as a result of the PSO.

6.5.6.4 Level Crossings

There are two general traffic level crossings within the Cotswolds District: Blockley and Chipping Campden. According to Network Rail's current Level Crossing Risk Assessment, Blockley has a risk rating of K while Chipping Campden has a risk rating of J. The assessment uses a scale from A to M where A represents a very high risk and M represents a very low risk. Therefore, both level crossings are currently classified as being on the lower-risk end of the scale.

To assess the impact of the PSO, ALCRM outputs for the baseline level crossing risk have been considered alongside a high-level assessment of the changes in crossing usage arising from the Local Plan. The assessment criteria and thresholds were discussed and agreed with the Technical Working Group (TWG). The assessment considered a combination of the percentage increase in traffic flow across each level crossing under the PSO scenario compared with the Core Minus scenario, together with the maximum queue length.

A level crossing is flagged as high impact if:

- more than a 10% increase in traffic flow and a maximum queue length exceeding 75% of the available stacking distance;
- a maximum queue length exceeding 100% of the available stacking distance.

The assessment criteria are summarised in Table 6-10.

Table 6-10: Derivation of ratings for level crossing 'flag analysis'

			Maximum Queue Length		
			<75% stacking distance	75-100%	>100%
% increase in traffic flow across the level crossing with the PSO compared to the Core Minus	<5% increase in traffic flow	Low	Low	Medium	High
	5-10% increase in traffic flow	Medium	Low	Medium	High
	>10% increase in traffic flow	High	Low	High	High

This assessment identified that the majority of affected level crossings have a medium-low baseline risk. However, Northway and Blockley level crossings were identified as higher-risk crossings (ALCRM Risk Category D) where forecast peak hour traffic flows are expected to increase by more than 10%. These locations may therefore require further consideration by Network Rail through more detailed assessment of the potential impacts.

7. Vision-led transport strategy

7.1 Introduction

This chapter describes the process of identifying, assessing, shortlisting and packaging the transport policies, infrastructure and services which:

- are necessary to take every practical means to achieve the transport vision and objectives of the Local Plan;
- mitigate unacceptable, residual impacts of the Preferred Spatial Option (PSO); and
- are feasible and affordable.

7.2 Summary of approach

Primarily, a comprehensive long list of transport interventions was identified and assessed individually at a high level, including consideration and alignment with the Local Plan vision and objectives, feasibility, deliverability and affordability. This assessment informed the selection of interventions for a series of transport packages, previously introduced in Section 5.7.

In total, four intervention packages were developed and tested through an iterative process:

- **Package A (Business as Usual+)** represented the minimum level of vision-led intervention, comprising measures that are expected to be delivered through existing commitments together with additional interventions required to support the Local Plan
- **Package B (Visionary Ambition)** built on Package A by introducing additional sustainable transport measures intended to maximise progress towards the Local Plan transport vision and objectives.
- **Package C (Mitigation Measures)** was developed based on where residual impacts remained after the assessment of Package B. It retained the critical and essential measures from Package B and added targeted highways mitigation measures to address remaining impacts on the network.
- **Package D (Vision-Led Scenario)** was developed following refinement of the PSO, incorporating changes arising from the modelling results, stakeholder feedback and minor updates to the spatial strategy. It represents the final recommended package of vision-led transport interventions to support the Local Plan, alongside the residual mitigation measures identified in Package C.

The packaged interventions were then assessed collectively for their impact, using the forecasting approaches described in Section 5.8. This assessment is presented in Section 7.6.

7.3 Interventions 'long list'

7.3.1 Introduction

This section describes the long list of interventions and how they were identified. Later sections describe how the long list was reduced to the final Package D of interventions and policies for inclusion in the Local Plan and/or Infrastructure Delivery Plan.

It is important to note that the objective was to identify interventions to support achievement of the transport vision; and to mitigate unacceptable transport impacts of the Local Plan related growth. Measures to support the transport vision are inherently intended to provide sustainable travel options to and from the PSO sites and minimise the need for travel by private car. Connecting the sites to existing amenities and sustainable transport networks was therefore a priority.

Implicit in this approach, is that it was not the intention to identify interventions required to deal with existing transport issues or those expected in the future without the Local Plan. Such matters are the responsibility of relevant highway and local transport authorities within the district and beyond. The focus on interventions was therefore where the Local Plan development traffic would make the transport network unacceptably worse compared to a without Local Plan future scenario.

The long list of interventions is intentionally broad and includes both site-specific and wider strategic interventions. Inclusion within the long list does not imply confirmed delivery, funding, or policy commitment. Instead, it provides the basis for subsequent sifting, appraisal, and identification of potential transport packages capable of supporting the emerging Local Plan strategy.

7.3.2 Identification of interventions

The long list of interventions was developed iteratively over a period of weeks. The initial focus was on identification of 'vision-led' interventions, i.e. proactive, top-down interventions which could support achievement of the transport vision and objectives. Subsequent activities identified 'mitigation' measures, i.e. interventions which may be required to manage unacceptable impacts of PSO-related traffic on the highway network.

Figure 7-1: Intervention classes

The following activities informed identification of the long list of interventions:

1. Review of existing infrastructure and service provision.
2. Examination of levels of connectivity by mode (using the DfT's Connectivity Tool) and current challenges and issues on the networks.
3. A review of existing delivery plans at district, county and national levels; for example the Gloucestershire County Council (GCC) Local Cycling & Walking Implementation Plans and Bus Service Improvement Plan.
4. Engagement with GCC, National Highways and other key stakeholders about investment plans under development (such as GCC's bus rapid transit proposal and updated Local Transport Plan).

5. Review of site masterplans (where existing).
6. Site visits to identify local connectivity measures to/from sites.
7. Examination of the location of existing local amenities, barriers to movement and opportunities to improve accessibility to identify additional local and strategic interventions.
8. Further engagement with GCC and National Highways to review the long list, identify any remaining gaps or issues.

7.4 The intervention 'long list'

Interventions within the long list can be broadly grouped as shown in Figure 7-2. All interventions are assumed to be compliant with relevant standard and best practice, and relevant Local Plan strategic policies.

Figure 7-2: Intervention typology

Class	Type	Example
Vision-led	Enhanced provision of **amenities and facilities** within new settlements and large sites.	Schools, retail, flexible office space.
	Local active travel infrastructure to provide direct access to the PSO sites.	New or improved walking and cycling routes.
	Strategic active travel infrastructure to provide high quality walking and/or cycling connectivity between sites and existing amenities, or to neighbouring settlements.	Greenways and 'quiet lanes'.
	New or enhanced **bus services** serving the sites.	Higher frequencies, route diversion, bus services.
	Rail service enhancements.	New stations, higher frequencies.
	New or enhanced **public transport infrastructure** to improve the reliability and attractiveness of public transport journeys.	Enhanced bus stops, mobility hubs, bus priority, bus gates.
	Infrastructure and/or services to support uptake of **micromobility and e-bikes**.	Micromobility trials, e-bike hire schemes.
	Improvements to the quality of **public realm** to enhance the quality of places.	Liveable neighbourhoods.
	Infrastructure or policies to **manage down the demand** for use of private cars.	Parking supply management, park & ride sites
Mitigation	Local **highway access** to sites.	New or improved junctions.
	Measures to **improve safety** for all road users including pedestrians and cyclists.	20 mph zones, traffic restrictions.
	Additional measures to ensure reliable bus services where PSO-related traffic increases delays.	Bus priority.

Class	Type	Example
	Targeted measures to **reduce unacceptable impacts (delays)** on general traffic and buses.	Junction capacity improvements, highway widening.

7.5 Initial intervention sift

7.5.1 Introduction

Following identification of the long list, an initial sifting process was followed to rule-out any interventions deemed to be undeliverable or unaffordable. The remaining interventions were taken forward for further assessment in terms of their impacts, feasibility and cost. A relatively small number of interventions were ruled out as the approach taken was to retain them unless there was a strong reason for, and agreement amongst stakeholders to, rule them out.

7.5.2 Approach to sifting

The sifting followed an approach considered proportionate to the stage in the planning process, the large number of interventions and the wide range of small active travel schemes to large infrastructure proposals.

The interventions were assessed against criteria which captured their alignment to the transport objectives (see Section 2.5) and their deliverability. The eleven criteria are shown in Figure 7-3; they are a combination of tests of alignment with the Local Plan transport objectives and a number of measures of deliverability.

Figure 7-3: Intervention assessment criteria and themes

Alignment to transport objectives	Fit with Objective #1: Meeting needs locally
	Fit with Objective #2: Healthier & greener transport
	Fit with Objective #3: Harmonious places
	Fit with Objective #4**:** Safe & resilient networks
	Fit with Objective #5**:** Attractive & viable public transport
Deliverability	Public acceptability
	Technical feasibility
	Timeliness
	Capital cost
	Affordability
	Alignment with wider policy and strategy objectives

The alignment to transport objective criteria were assessed by considering the:

- likely effectiveness of the intervention in supporting achievement of the objective; and
- the number of trips likely to be influenced by the intervention.

Interventions affecting a larger proportion of Local Plan trips and achieving stronger transport outcomes generally received higher ratings, while measures with limited effectiveness or influence received lower scores.

Each intervention was scored using a Red/Amber/Green (RAG) rating system against each criterion. The interventions were scored based on professional judgement informed by outcomes elsewhere. Scoring of the affordability of interventions was based on high level cost estimates based on unit rates and outturn costs from previous projects. Detailed costing, design or risk identification was not undertaken at this stage.

Following the high-level assessment and scoring of the intervention long list, together with detailed engagement with CDC and other key stakeholders, the long list was refined to develop Package A (Business as Usual+) and Package B (Visionary Ambition).

Each package was assessed and the outputs were reviewed against the vision and objectives, as well as the flag analysis presented in Section 7.5. This analysis evaluated the transport measures and identified locations where they had resolved or reduced transport impacts, meaning that highway interventions were not required. As part of this process, each intervention was reviewed and categorised as 'Critical', 'Essential' or 'Important', according to its relative importance in supporting the Local Plan.

These findings, together with stakeholder feedback, informed the development of Package C (Mitigation Package), which introduced the targeted highways mitigation measures to address any residual impacts on the network.

The assessment of Packages A, B and C, together with continued engagement with CDC and key stakeholders and revisions to the PSO informed the development of Package D, the final transport intervention package. It comprises the recommended combination of transport interventions required to support the delivery of the Local Plan, maximise progress towards the transport vision and objectives, and mitigate the residual transport impacts of the PSO.

A comprehensive list of the interventions and mitigation measures included within Package D is provided in Annex F. The locations of these interventions and mitigation measures are illustrated in the maps presented in Annex G.

7.6 Forecast impacts of the Vision-Led Scenario

The Vision-Led Scenario (VLS) for CDC is comprised of Package D, combining the Local Plan growth with the refined transport intervention and mitigations. This section compares the VLS with the PSO scenario (i.e. the PSO without transport interventions) to assess the impact of the Package D measures. Both scenarios assume the same Local Plan sites; however, only the VLS includes the final transport interventions and mitigation measures detailed in the final shortlist (Package D) set out in Annex F.

This section details the impact of the VLS in terms of changes to overall trip making and in regard to the KPIs set out in Section 2.6. Overall, it assesses the extent to which the transport interventions and mitigations present in the VLS fulfil the transport vision and objectives set out for the Local Plan.

The results presented are considered to be worst-case in terms of the share of trips which are made by modes other than car or van. This is because:

- The average public transport and active travel mode shares in the district are considerably higher than those assumed in the modelling via the trip rates, even for deeply rural locations.
- As the VDM predicts the mode shift, not the absolute mode share, a higher non-car mode share assumption pre-VDM would result in a higher non-car mode share post-VDM than can reliably be expected. They do not reflect:
    - understanding that new behaviour is easier to shift than existing behaviour;
    - cultural change factors e.g. Netherlands style change in attitudes towards cycling; or
    - multi-modal factors e.g. active travel improvements creating high viability of public transport for longer distance trips.

7.6.1 Overall changes to trip making

As previously discussed in Section 6.5.2, Local Plan growth is expected to substantially increase the number of trips undertaken in the district compared to the Core Minus scenario. Similar to modelling the impacts of the PSO, when modelling the impacts of the VLS, sites comprising more than 500 dwellings were represented as separate zones within the GC3M, allowing their trip generation and network impacts to be isolated. Figure 7-4 illustrates the additional trips associated with these major development sites, aggregated by settlement, after the introduction of the interventions and mitigations in the VLS.

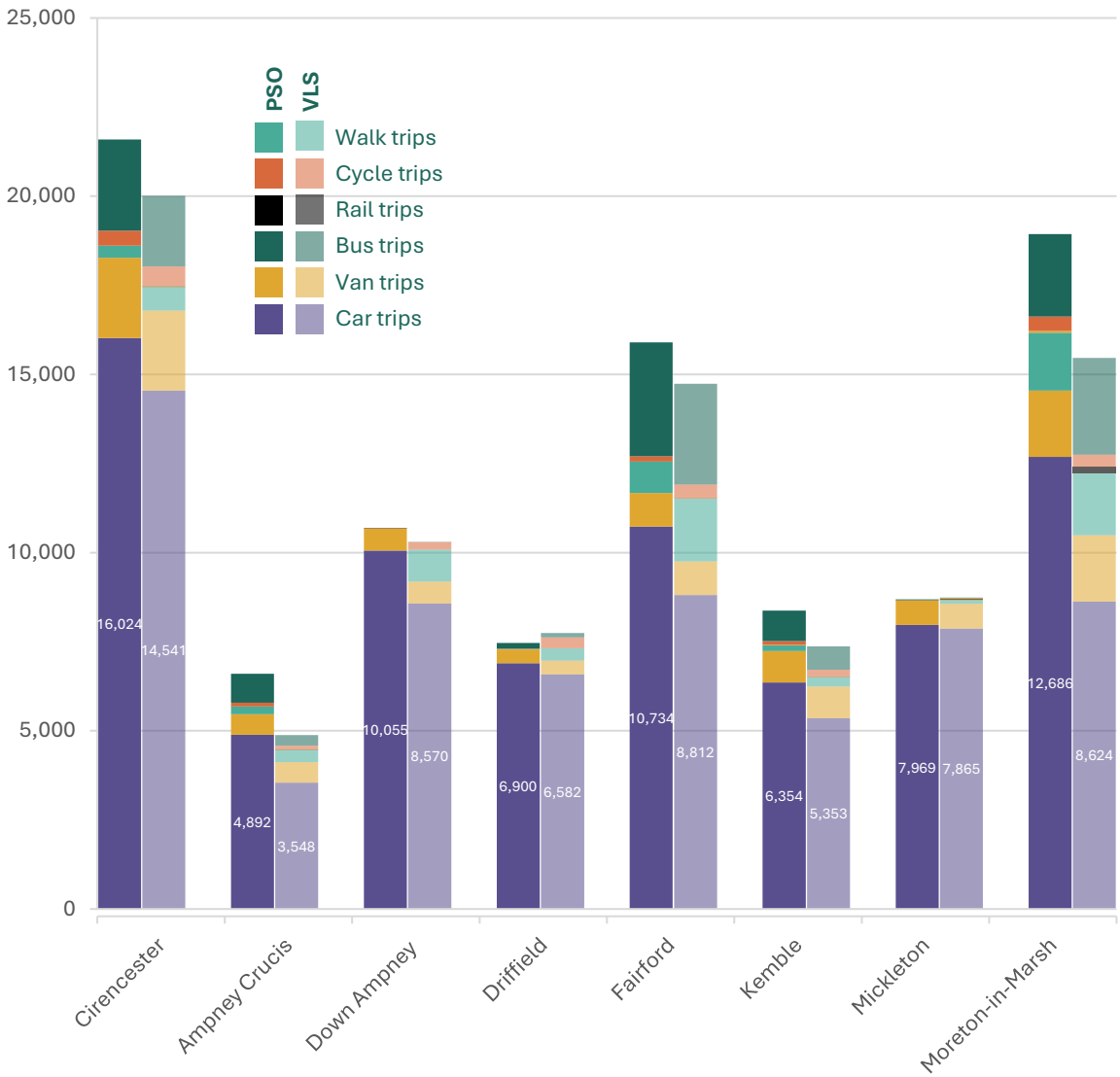
The majority of this decrease is driven by a reduction in car travel, with car trips falling by around 11,700 across the settlements. While there are increases in bus, rail and cycle trips, these only partially offset the reduction in car use. Van trips remain effectively unchanged, reflecting that the VLS does not include any interventions specifically targeting van travel.

Walking trips appear to decrease under the VLS. This may reflect some short walking trips shifting to cycling or public transport as these modes become more attractive. It may also be influenced by the modelling approach, which does not fully capture the internalisation of trips, meaning the reduction in walking trip should be interpreted with caution.

Overall, the package results in a net reduction in total trips, driven primarily by lower levels of car travel and accompanied by a shift towards more sustainable modes. The reduction in car trips is likely to reflect a combination of trip evaporation and trip consolidation, as some interventions make some car journeys less convenient while encouraging travellers to combine trips or choose alternative modes. In addition, the several site masterplans include onsite services. There are expected to increase the number of shorter, intra-site trips that can be made on foot or cycle, which are not included in the trip outputs.

It should be noted that during model development, an issue with the VLS network connectors restricted access to bus stops close to the Ampney Crucis settlement, affecting access to routes and influencing the distribution of bus trips. This issue was resolved by adjusting the affected trips so access from an alternative direction was increased, restoring connectivity to the bus stops.

Figure 7-4: Total number of trips to/from the residential sites in the PSO and VLS by settlement (during a weekday 12-hour period)



7.6.2 Impact on meeting vision and objectives

7.6.2.1 Objective #1: Meeting needs locally

To achieve Objective #1, under the VLS the development sites masterplans are expected to deliver services and facilities within the sites where appropriate, reducing the need to travel. The masterplans are expected to prioritise walking and cycling journey within the sites, delivered alongside high quality active travel interventions connecting the sites to local services. This enables residents to access a wider range of services without relying on a private car.

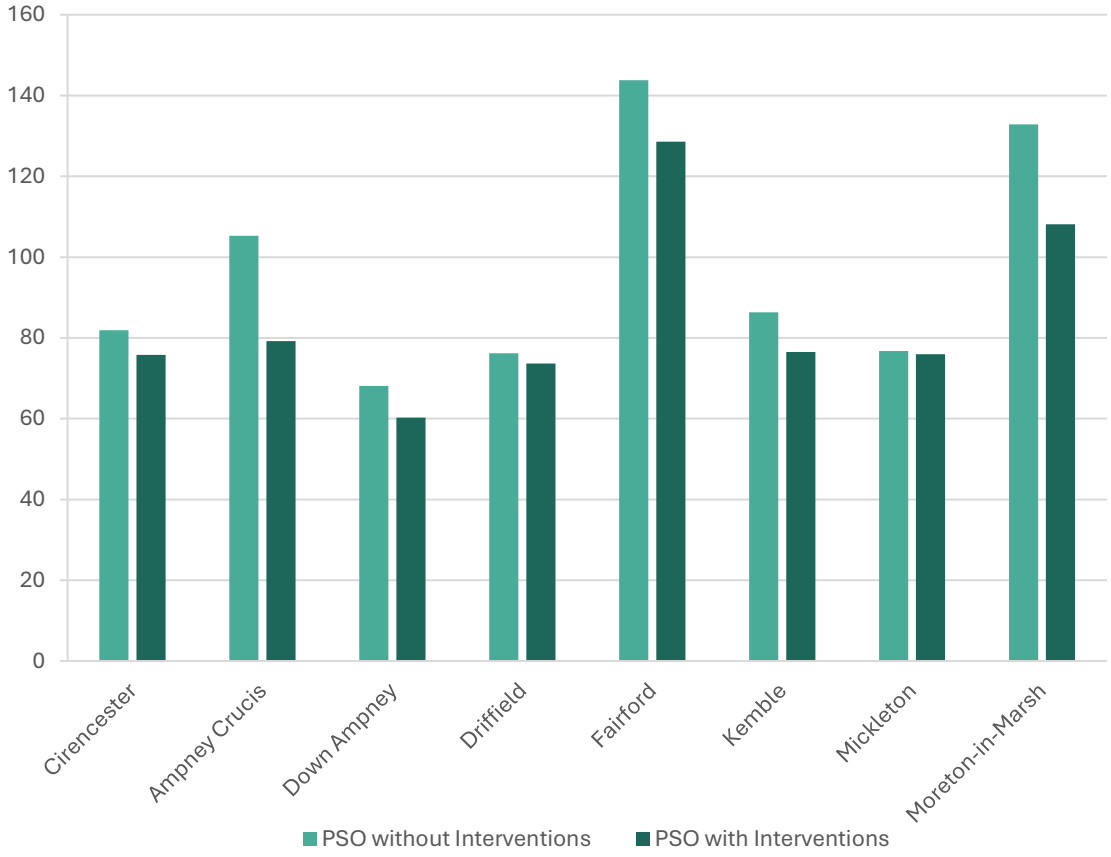
To assess the impact of the VLS on Objective #1, the average total distance travelled per day by cars/van per resident was calculated across the settlements. Figure 7-5 shows that the VLS reduces average travel distances across all settlements, with the most significant

reductions observed in Ampney Crucis (-22%) and Moreton-in-Marsh (-18%). The smallest reduction is seen in Mickleton, where travel distances decrease by less than 1%.

Despite the reductions achieved through the VLS, average daily distance travelled per resident remains the highest in Fairford, at 128 km per day, followed by Moreton-in-Marsh at 108 km per day. Conversely, Down Ampney records the lowest average distance travelled per resident, at 60 km per day.

These results indicate that while the VLS helps reduce car and van travel across settlements, existing difference in travel patterns and settlement characteristics continue to influence overall travel demand.

Figure 7-5: Average distance travelled per day per resident in the PSO and VLS (weekday 12 hours)



7.6.2.2 Objective #2: Healthier & greener transport

To support Objective #2, under the VLS the masterplans and policies for the proposed sites are assumed to promote active and sustainable travel and deliver best practice levels of infrastructure. This includes the delivery of high-quality active travel infrastructure within the sites, alongside wider interventions that enable healthier and greener travel patterns. These measures will support sustainable journeys both within the sites and to/from surrounding areas.

In addition, EV charging points are expected to be delivered across the sites, aligning with the wider district-wide EV charging strategy and supporting the transition towards lower-emission travel. Parcel hubs and dedicated drop-off/collection points are also expected to

be incorporated within the sites to support more efficient last-mile freight deliveries, reducing unnecessary vehicle trips.

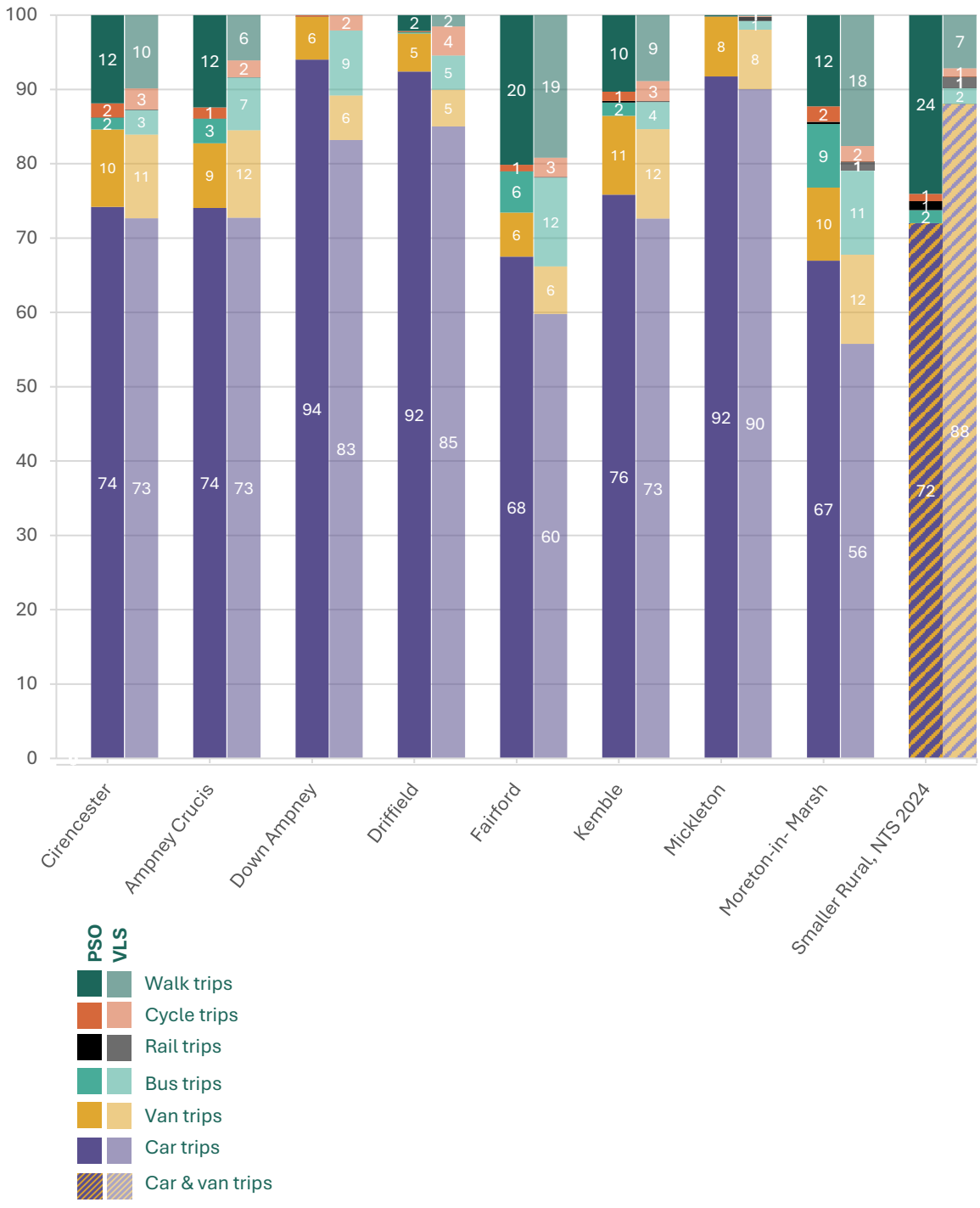
To assess the impacts of VLS against Objective #2, the change in mode share for trips to/from the residential sites was calculated for each settlement. Figure 7-6 below present the mode share for each settlement in the PSO scenario and with the impacts of the VLS.

Under the VLS, a reduction in car and van mode share is observed in Down Ampney, Driffield, Fairford, Kemble and Moreton-in-Marsh, indicating a shift away from private vehicle use in these settlements. This change is accompanied by an increase in bus mode share across all settlements, with the most notable increases observed in Fairford, Ampney Crucis and Kemble. These results suggest that the VLS supports a shift towards more sustainable travel modes, particularly through improved uptake of public transport.

The GC3M strategic model generally forecasts lower levels of walking than would be expected in practice. This is likely because the model is not designed to capture many shorter walking trips, particularly those of less than one mile, which fall beyond the scope of the strategic model. To provide a more representative comparison, National Travel Survey (2024) benchmarks have been included for similar smaller rural settlements to account for these shorter walking trips. These benchmarks provide a reasonable range within which the walking mode share is likely to fall.

Taking this into account, the results indicate that, aside from the known limitations related to walking, the VLS mode shares are generally comparable to, or better than, those observed in similar settlements for cycling, bus and walking, and in the case of Moreton-in-Marsh, rail. Kemble remains below similar settlements for rail mode share, while Mickleton continues to perform below comparable settlements across sustainable modes, even following the implementation of the VLS.

Figure 7-6: Mode share of all trips to/from PSO residential sites only in the PSO and VLS (weekday 12 hours)



7.6.2.3 Objective #3: Harmonious places

In achieving Objective #3, the development sites and the required transport infrastructure to support them are expected to be designed and delivered to a high standard. This includes minimising the impacts of through traffic on air quality, ensuring site layouts and

infrastructure proposals adhere to natural heritage and protected landscape guidelines, and integrating high-quality green spaces as part of the overall design.

Transport infrastructure should be carefully planned to enable safe and sustainable movement while complementing the character of the surrounding area. This means ensuring the roads and associated infrastructure do not dominate the landscape or detract from the quality and identity of the places being created.

7.6.2.4 Objective #4: Safe & resilient networks

To achieve Objective #4, it is expected that the masterplans of each site would adopt a Vision Zero approach, prioritising the prevention of serious injuries and improving safety through design. Alongside this, all new transport interventions and services are expected to be delivered to a high safety standard, incorporating appropriate measures such as lighting, clear visibility, barriers and signage to support safe movement for all users.

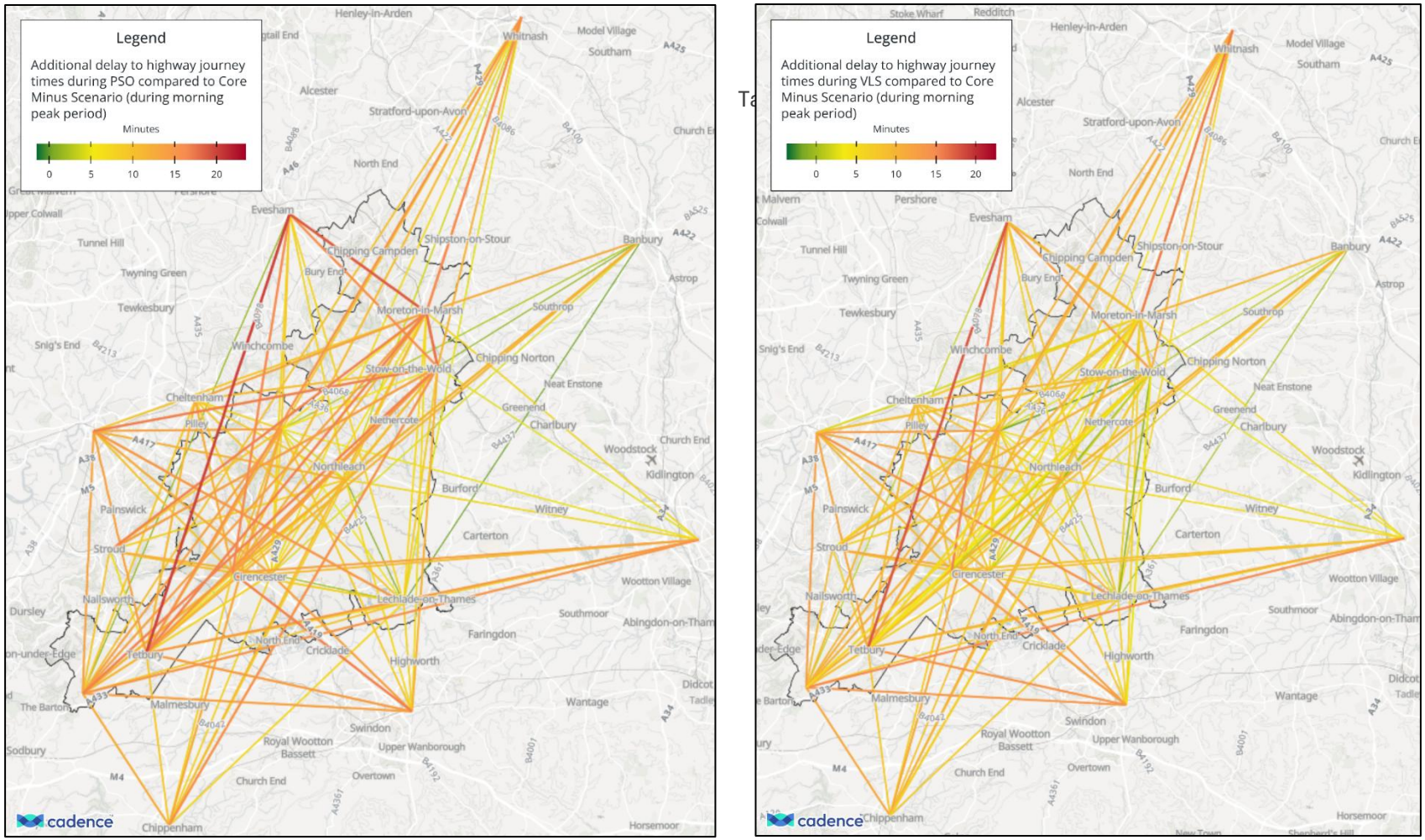
The VLS delivers a multimodal transport strategy, including improved active travel and public transport provision, providing users with a range of travel options for individual journeys. The new walking and cycling routes will be designed to be safe, attractive and resilient, providing reliable connections that can support travel in all conditions.

To assess the impact of the VLS on achieving Objective #3, highways journey times were compared under the PSO and VLS scenarios. This provides an indication of the highway network's resilience, showing the ability of the network to absorb disruption and support safe and reliable movement within the district.

Under the PSO scenario (Figure 7-7), a large proportion of routes within and to/from the district experience additional delays of at least 10 mins, compared to travel times in the Core Minus scenario. The greatest impacts are observed on inter district routes connecting Tetbury, Moreton-in-Marsh and Stow-on-the-Wold. In addition, intra-district routes originating from Tetbury experience the most significant delays, with journey times increasing by up to 20 minutes compared with the Core Minus scenario when travelling towards Evesham.

Under the VLS scenario (Figure 7-7), highway journey times experience comparatively lower additional delay of the Core Minus travel times than under the PSO scenario with intervention. The majority of routes within the district experience delays of between 1 and 10 minutes, demonstrating the effectiveness of the transport interventions and mitigations in the VLS. However, some intra-district routes continue to experience delays of over 15 minutes, including routes between Tetbury and Evesham, and Morton-in-Marsh and Leamington Spa. This indicates that areas with residual impacts remain.

Figure 7-7: Additional delay to highway journey times (mins) over the Core Minus scenario during morning peak period (08:00-09:00) under the PSO (left) and VLS (right)



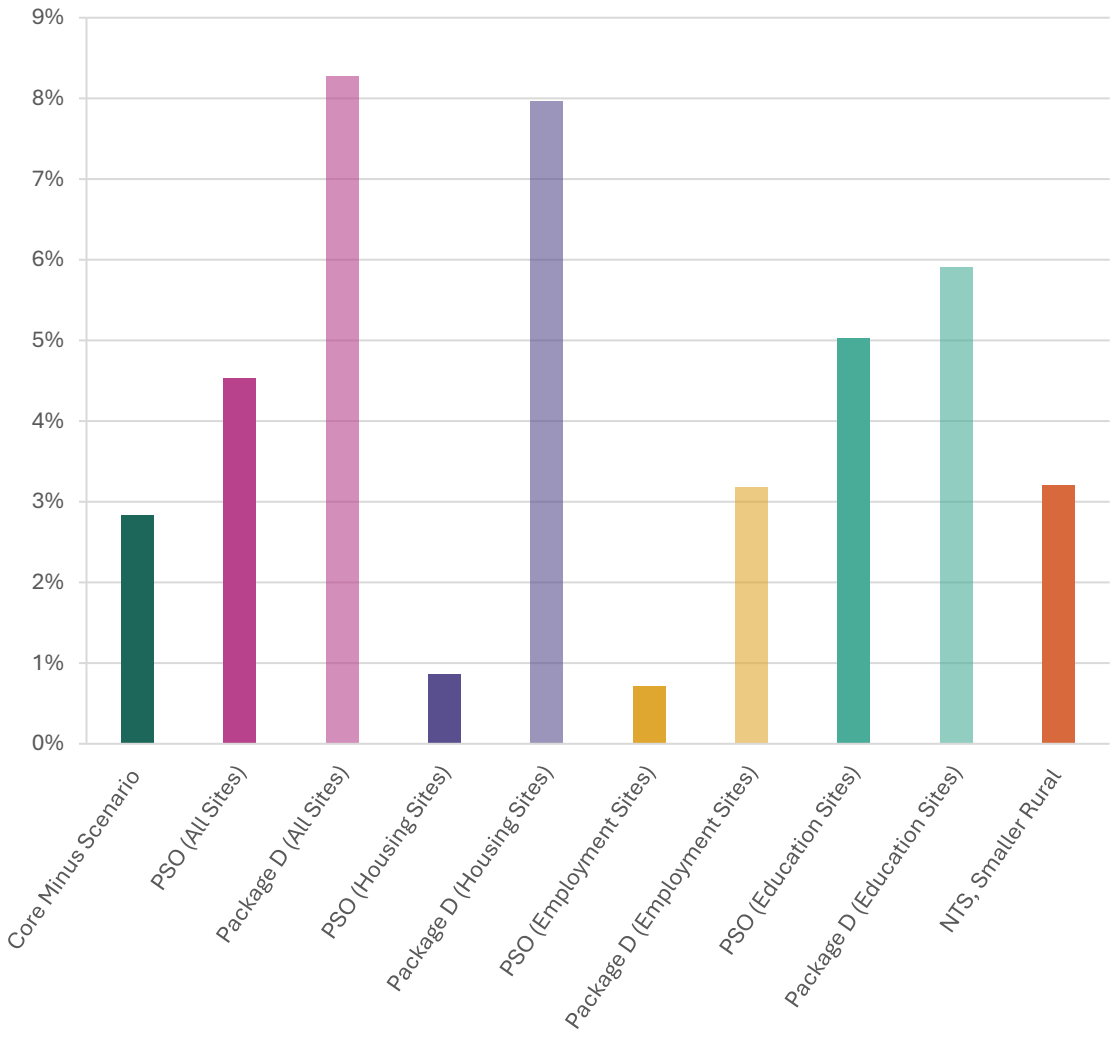
7.6.2.5 Objective #5: Attractive & viable public transport

To achieve Objective #5, all new public transport routes under the VLS are expected to be delivered to a high standard, with high quality supporting infrastructure such as accessible stops, passenger waiting facilities, clear information and safe access.

To assess the impact of the VLS against Objective #5, the public transport mode share for all trips to/from PSO sites across the district was examined, in comparison to the public transport mode shares in the PSO scenario without intervention (Figure 7-8).

Figure 7-8 shows that averaged across all sites, the public transport mode share increases from 4.5% to 8.3% under the VLS. The largest increases are seen for housing and employment sites. Educations sites display a relatively smaller increase of only 0.9 percentage points. This is likely because trips to/from education sites already exhibit a comparatively high public transport mode share due to existing travel patterns.

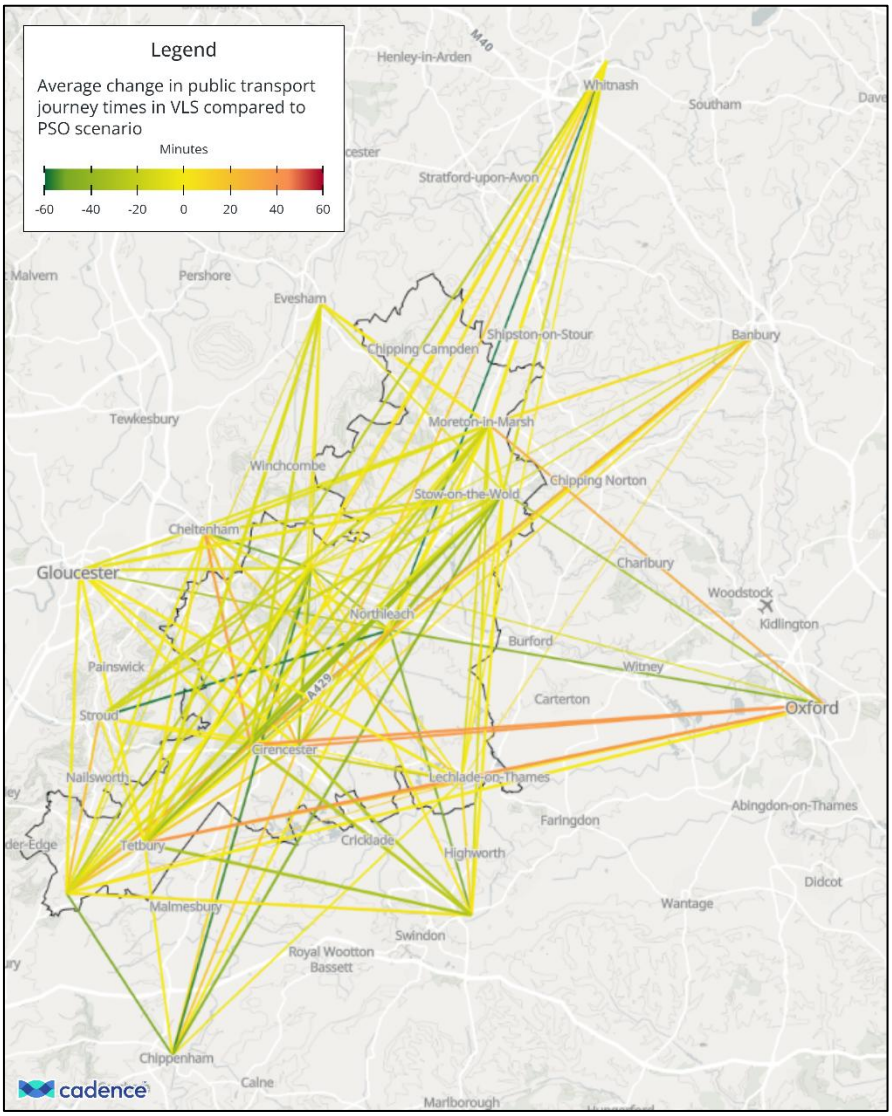
Figure 7-8: Public transport mode share of all trips to/from the PSO sites (weekday 12 hours)



Additionally, the average change of public transport journey times under the VLS, compared to the PSO was assessed to understand the impacts of the proposed public transport interventions on achieving Objective #5.

Figure 7-9 shows that intra-district public transport journey times either reduce or remain unchanged, whereas journeys to Oxford particularly appear to increase in time. Overall, the improvements to journey times within the district helps strengthen the attractiveness of the public transport network under the VLS.

Figure 7-9: Average change in public transport journey times (mins) in the VLS compared to the PSO scenario



ofImpacts on transport networks

7.6.2.6 Impacts on active travel

The impacts of the VLS on active travel networks was assessed following the approach used to assess the impacts of the PSO in Section 6.5.3. All modelled links were reviewed against the LTN 1/20 criteria to determine whether they provide adequate protection from motor traffic, based on cycling infrastructure, speed limits, traffic volumes, and HGV proportions.

The previous assessment of the PSO without intervention identified several routes, particularly in and around Cirencester, that became unsuitable for the majority of cyclists as a result of Local Plan growth. These flagged locations were subsequently assessed according to the scale and value of the mitigation required. For most of the active travel issues identified through the PSO, targeted interventions were incorporated into Package D to improve suitability for active travel. In addition, further active travel mitigation measures have been identified, although these were not included in the modelling at the time of the assessment.

Several active travel flags were considered not to require intervention or mitigation. These are summarised below in Table 7-1, together with the rationale for each decision.

Table 7-1: Active travel flags not receiving mitigation

Settlement	Flag Location	Reason
Cirencester	Spitalgate Lane/Thomas Street/Park Street	Methodology quirk- represents several different routes through one way system.
Cirencester	Unnamed Road from Cheltenham to Whiteway	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Italy	Slip roads off A417 eastbound and westbound to Daglingworth	This flag arises from the methodology used to identify active travel flags, which is based on a speed assessment. Although the assessment highlights these locations, the roads are not considered suitable for active travel use and therefore no intervention or mitigation is proposed.
Kemble	Oxlease Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Kemble	Unnamed road A433 to Rodmarton	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Ewen	Ewen Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely

Settlement	Flag Location	Reason
		to attract or accommodate active travel movements.
Driffield Junction	Slip road off A417 southbound at Spine Road Junction	This flag arises from the methodology used to identify active travel flags, which is based on a speed assessment. Although the assessment highlights these locations, the roads are not considered suitable for active travel use and therefore no intervention or mitigation is proposed.
Netherton	Springfield Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Netherton	Church Road/Victoria Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Northleach	West End/East End	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Lower Slaughter	B4068	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Stow-on-the-Wold	Parson's Corner	This location is surrounded by an unsuitable active travel network and is caused by only a minimal change in traffic flows along the route.
Evenlode	Adlestrop Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Blockley	Station Road	This location is surrounded by an unsuitable active travel network and is therefore unlikely to attract or accommodate active travel movements.
Chipping Camden	Sheep Street	This is a result of the sensitivity of the methodology, where only minimal changes in flow cause locations to exceed the threshold considered unsuitable for active travel.

7.6.2.7 Impacts on delays and congestion affecting highway traffic

Approach

To understand the potential highway impacts of the PSO with Intervention, an identical VLS assessment of the operational performance of the highway network was undertaken for this scenario. The assessment drew on GC3M-based outputs for these scenarios, specifically:

- forecast differences in traffic flows between the Core Minus Scenario and the VLS;
- forecast differences in the ratio of traffic volume and capacity ('V/C') of links and nodes; and
- where forecast increases (in the VLS scenario with respect to the Core Minus scenario) in traffic delay.

Forecast impact of the VLS on traffic flows

Figure 7-10 and Figure 7-11 represent the forecast difference in traffic flows between the VLS and the Core Minus scenario during the morning and evening peak hours, illustrating the impact of the proposed interventions and mitigations.

Compared to the PSO, the VLS results in a redistribution of traffic around Cirencester itself, with more traffic rerouted onto the Bristol Road/Swindon Road corridor and the A429 (Bristol Road) within the town, rather than concentrated on the A419/A417 approaches as under the PSO scenario. Additionally, under the VLS, traffic growth on the A429 north of Cirencester is reduced relative to PSO scenario, and the increases previously seen on routes serving Moreton-in-Marsh and the northern part of the district are also lower under the VLS.

Figure 7-10: Forecasted traffic flow difference on links between VLS and Core Minus scenario during morning peak hour (08:00-09:00)

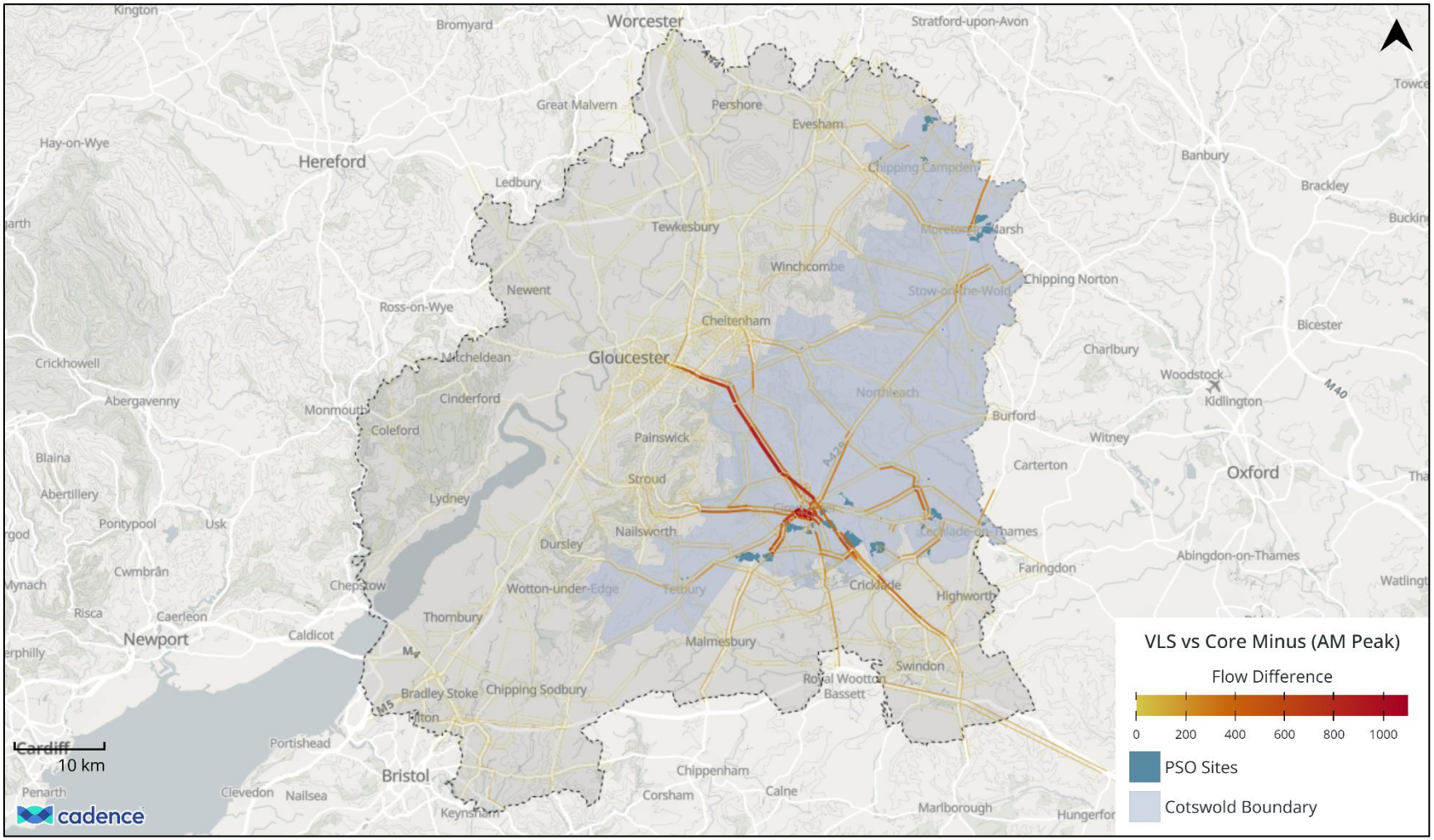
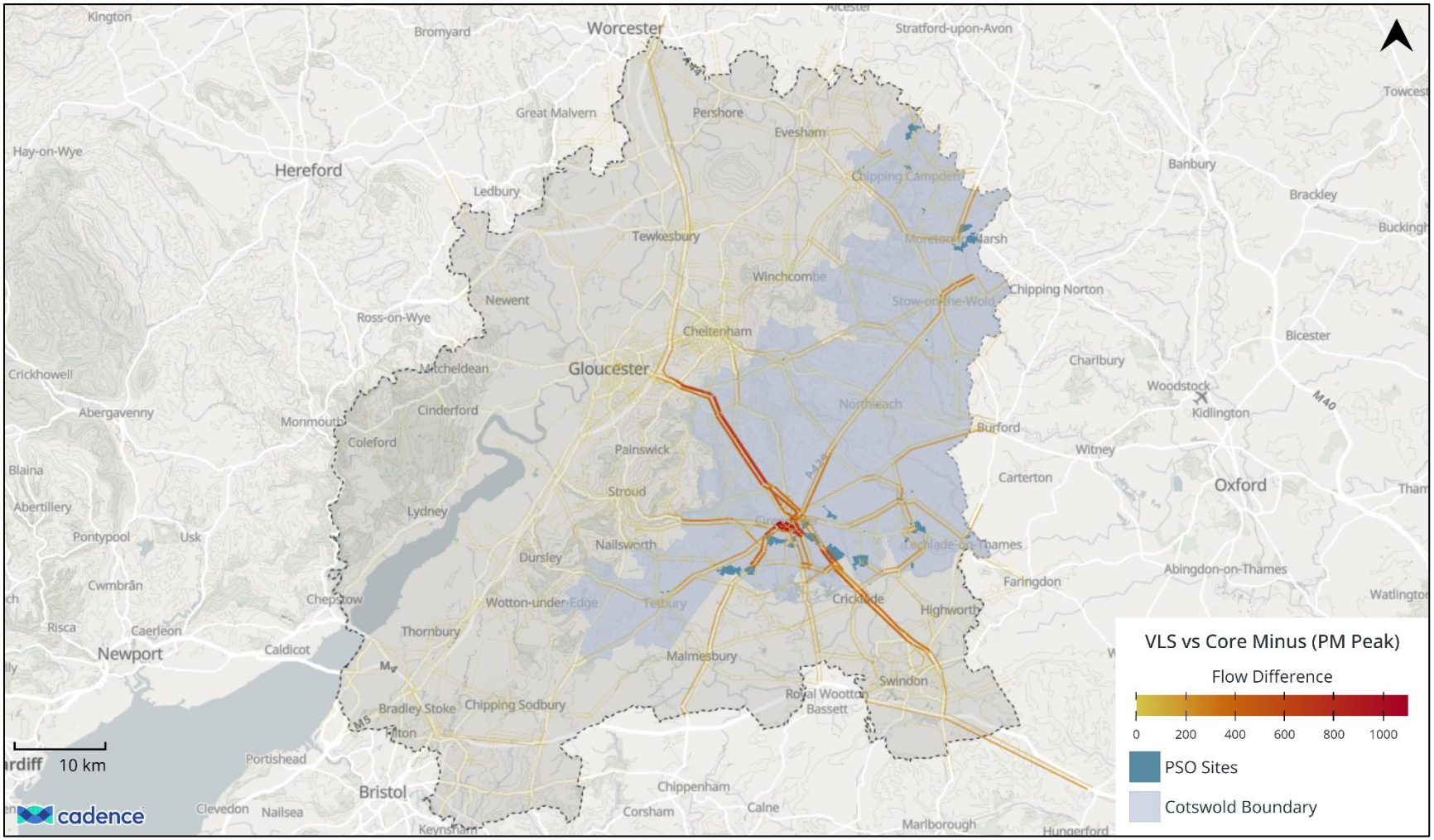


Figure 7-11: Forecasted traffic flow difference on links between VLS and Core Minus scenario during evening peak hour (17:00-18:00)



Forecast impacts of the VLS on the ratio of traffic volume and capacity ('V/C')

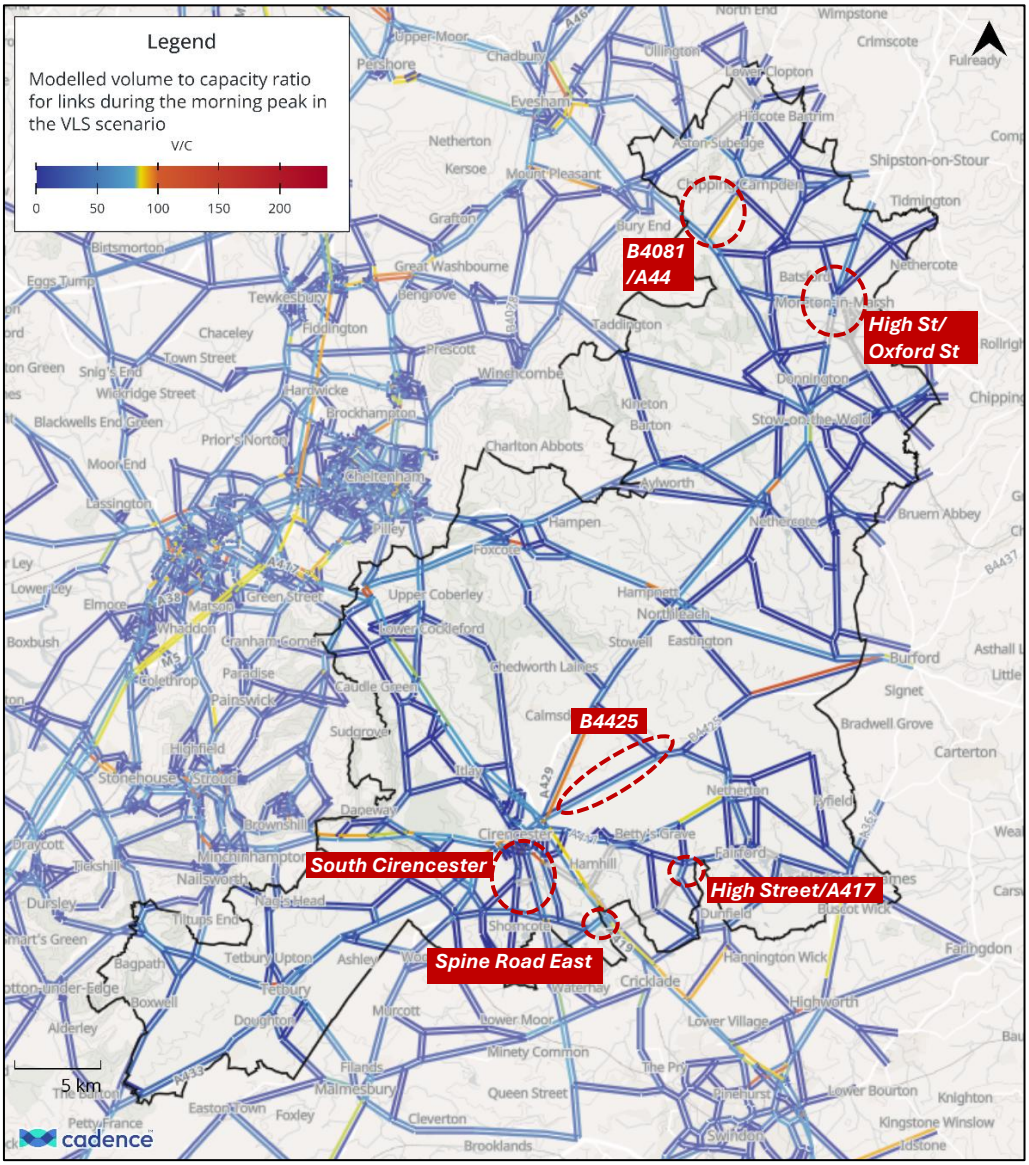
The modelled link V/C ratios for the VLS scenario in the future year morning peak hour (08:00-09:00) are shown in Figure 7-12.

Compared with the PSO, the VLS shows reduced V/C ratios on several key network links. This reflects the impact of the proposed interventions reducing traffic volumes at locations that were previously approaching or exceeding operational capacity.

The following locations were identified in the PSO as exceeding operational capacity during the morning peak hour but now have reduced V/C ratios:

- B4081 southbound from Chipping Campden approaching the A44/B4081 intersection, where V/C reduces from 101% to 90%;
- the High Street/Oxford Street junction in Moreton-in-Marsh, where V/C reduces from 105%/102% to 91%/74%;
- south Cirencester, where V/C on Somerford Road reduces substantially from 102%/97% to 14%/15%, and on the A429/Chesterton Lane junction reduces from 109% to 95%;
- the B4425 approaching the A429/B4229 intersection, where V/C reduces from 92% to 66%;
- Spine Road East approaching the Station Road/Cerney Wick Lane intersection, where V/C reduces from 101% to 78%;
- High Street approaching the A417 Roman Road junction, where V/C reduces from 103% to 59%.

Figure 7-12: Forecasted volume to capacity (V/C) ratio on modelled links under the VLS during morning peak hour (08:00-09:00)



7.6.2.8 Delay and V/C ratio 'flag' analysis

Delay and V/C ratio flag analysis was undertaken for the VLS in accordance with the methodology and rating thresholds set out in Section 6.5.6.

The analysis indicates that the majority of links and junctions initially identified as experiencing high impacts were successfully addressed through the tested mitigation measures. Results are summarised in Table 7-2 to Table 7-5.

In the AM peak, one junction remains flagged at the A419 Swindon Road/A429 Bristol Road Roundabout in Cirencester. A mitigation strategy has already been identified for this location. It is therefore recommended that any remaining operational concerns are

considered through more detailed junction assessment or microsimulation modelling at the detailed design stage, rather than through further strategic model testing.

In the PM Peak, the following junctions remain flagged:

- B4063 London Road/ Horton Road (In Gloucester);
- A4019 Swindon Road/Poole Way (In Cheltenham);
- B4014/A4135 (In Tetbury); and
- Merlin Way/Covingham Drive (In Covingham).

These locations lie outside the study area and beyond the Cotswold District boundary. As such, they are considered to represent modelled network 'noise' rather than impacts directly related to the proposed development. As such, they are not expected to require mitigation as part of this assessment and should instead be subject to a monitor and manage approach.

Table 7-2: Summary of link and junction V/C flag assessment results (AM Peak Hour)

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	2338	52	6
	5 to 10%	574	26	0
	Over 10%	580	33	1

Table 7-3: Summary of link and junction V/C flag assessment results (PM Peak Hour)

		Resultant V/C ratio (in PSO scenario)		
		Below 85%	85 to 100%	Over 100%
Increase in V/C ratio	Less than 5%	2400	45	10
	5 to 10%	629	22	1
	Over 10%	594	21	2

Table 7-4: Summary of link and junction delay flag assessment results (AM Peak Hour)

		Resultant delay (in PSO scenario)		
		1-2 mins	2-5 mins	5 mins +
Increase in delay	Less than 5%	2158	6	0
	5 to 10%	314	1	0
	Over 10%	1124	7	0

Table 7-5: Summary of link and junction delay flag assessment results (PM Peak Hour)

		Resultant delay (in PSO scenario)		
		1-2 mins	2-5 mins	5 mins +
Increase in delay	Less than 5%	2418	7	1
	5 to 10%	358	1	1
	Over 10%	1260	14	1

8. Costs, funding, delivery & viability

8.1 Introduction

This section describes the approach taken to assessing the viability and deliverability of interventions in the transport package. The assessment has been informed by ongoing engagement with key stakeholders including Cotswold District Council (CDC), Gloucestershire County Council (GCC), National Highways (NH) and the Infrastructure Delivery Plan (IDP) consultants. These discussions have helped inform the feasibility, cost estimates and deliverability of the proposed interventions.

8.2 Methodology for estimating costs

A comprehensive exercise was undertaken to estimate the costs of all identified transport interventions, with a particular focus on larger strategic interventions. Provision of on-site amenities such as schools and retail were not costed as are addressed in the IDP. The methodology estimated both the cost of constructing new assets (capital costs) and the cost of ongoing operations and commuted maintenance (revenue expenditure).

8.2.1 Estimation of capital costs ('capex')

Capital costs were estimated for each intervention based on unit rates derived from outturn prices and estimates from a range of sources. Details of sources are provided in Annex F. Unit rates were derived for the following intervention types:

- Active travel infrastructure (including links to new developments): Unit rates were on a per-kilometre basis.
- Public transport infrastructure: Unit rates were a mix of a per-kilometre basis (e.g. bus lanes) and per-scheme basis (e.g. mobility hubs). Where appropriate a range of unit rates were used depending on the scheme size.
- Highway infrastructure: As above, some unit rates were on a per-kilometre basis (e.g. acoustic barriers, traffic calming) whilst others were on a per-scheme basis (e.g. new junctions, junction signalisation).
- Micro-mobility trials: Unit rates were based on the number of residents in developments.
- Park & ride sites: Based on the published costs for a previously delivered similar park & ride scheme.
- Bus services: Capital costs were not included because depreciation is included in the calculation of bus operating costs (see below).

For some of the schemes indicative total cost was used in the absence of sufficient detail to allow use of unit rates at this time.

Outturn costs and cost estimates were converted to 2025/26 prices using the DfT's Cost inflation Series (TAG Table A1.2.1).

8.2.2 Estimation of maintenance and operating costs ('opex')

Maintenance and operating costs were estimated for each intervention as follows:

- Infrastructure projects delivering asset types requiring intensive upkeep: additional commuted sum over a 15-year lifecycle period. The value applied was a percentage of the original capex, intended to reflect annual routine maintenance and a single renewal event. This includes interventions such as structures.
- All other infrastructure projects: no additional maintenance, renewal, or operating costs were assumed.
- Bus services: A unit rate per service kilometre was applied to additional mileage from new or enhanced conventional bus services. The unit rate was derived from the annual Cost Monitor (June 2025) prepared by the Confederation for Passenger Transport. Operating costs were assumed to be incurred for a five-year period.

8.3 Viability and Deliverability

The proposed transport interventions have undergone proportionate technical feasibility testing to ensure they are physically deliverable within the plan period. This assessment draws on the structured sifting and appraisal process set out in Chapter 7, where technical feasibility has been considered alongside deliverability factors including cost, timeliness and policy alignment.

Overall, the assessment indicates that the majority of interventions are capable of delivery within the Local Plan period, with no fundamental constraints identified that would preclude implementation.

1. **Route Design and Cost Assessment**

Interventions have been developed to a proportionate level of design detail to demonstrate their deliverability and provide an appropriate basis for cost estimation. Route options, particularly for active travel corridors and highways improvements, have been reviewed against land requirements, accessibility considerations and likely construction requirements.

Indicative costs have been developed based on the level of design available at this stage, with assumptions reflecting typical infrastructure requirements. Further detailed design, surveys and cost refinement would be undertaken at subsequent stages. However, the current assessment provides sufficient confidence that the interventions and mitigations represent viable and deliverahas ble measures.

2. **Feasibility Constraints**

Interventions have been subject to a high-level feasibility assessment to consider local constraints, including road widths, available road space, junction geometry, accessibility requirements and existing infrastructure conditions. Particular consideration has been given to locations identified as challenges through stakeholder feedback.

Where constraints have been identified, interventions have been refined through design/route amendments or changes to the intervention type. Schemes with significant challenges or uncertainty have been removed through the sifting process.

3. **Geographical and Third Party Land Constraints**

Schemes have been designed within the boundary of the existing public highway wherever possible, particularly for local highway access, junction improvements and active travel interventions. This reflects the intention to minimise land take and reduce delivery risk.

Where third-party land acquisition is required for more strategic interventions, such as strategic active travel corridors, mobility hubs or highway capacity improvements, a high-level assessment has been undertaken. Land requirements have been minimised where possible, and alternative options or safeguarding approaches have been identified to reduce potential barriers to delivery.

At this stage, third-party land requirements are not considered to represent insurmountable constraints and are consistent with standard delivery mechanisms through the Local Plan and Infrastructure Delivery Plan.

Interventions with more significant land or infrastructure requirements, particularly major rail schemes, have been subject to initial sifting and, where necessary, excluded or identified as requiring further feasibility work.

4. **Topographical and Environmental Factors**

Active travel designs have been verified against local topography to ensure gradients are broadly consistent with LTN 1/20 accessibility standards. Route selection prioritised more direct and lower-gradient corridors where feasible. Complementary measures, such as micromobility, also support feasibility in more challenging locations.

Drainage and environmental considerations have been incorporated at a high level. In particular, drainage assessments ensure designs can accommodate sustainable drainage systems (SuDS), especially where highway widening or corridor interventions are proposed. Wider environmental constraints, including flood risk, have been considered in identifying feasible intervention types and locations.

5. **Utility Allocations**

Utility allocations have been considered proportionately within the feasibility assessment. For major junction and highway schemes, indicative layouts and cost assumptions allow for potential diversions of statutory undertakers' equipment, including fibre, gas and electricity infrastructure.

Whilst detailed ground investigations (e.g. GPR surveys) would be required at later design stages, these constraints have been appropriately reflected at this stage and are not considered to undermine the overall feasibility of the intervention package.

6. **Transport Impact and Intervention Justification**

The final intervention package has been informed by evidence from the transport modelling assessment, ensuring that the interventions are proportionate to the identified impacts of the development. Where the PSO assessment indicated a limited change in transport conditions or where the model demonstrated limited uptake or benefit from the proposed interventions, the schemes were reviewed and, where appropriate, removed or amended.

This ensures that the final intervention package is focused on measures that provide a clear and evidenced transport benefit and can be justified against the impacts of Local Plan growth.

7. **Stakeholder Engagement and Package Refinement**

Stakeholder feedback has been incorporated throughout the development of the intervention package. Comments received during workshops and engagement have informed changes to the intervention scope, feasibility and prioritisation.

Where stakeholders identified additional transport issues or opportunities, new interventions were considered and incorporated where they demonstrated sufficient justification, deliverability and alignment with the Local Plan objectives.

8. **Infrastructure Delivery Plan Alignment and Delivery Review**

The intervention package has been reviewed iteratively with the Infrastructure Delivery Plan (IDP) consultants (Prior and Partners) to ensure that infrastructure requirements are appropriately identified, justified, and align with the wider delivery framework. This has included consideration of overall package viability, funding requirements, delivery mechanisms and justification based on site impacts.

This process has supported the refinement of the package to ensure that interventions are proportionate, deliverable and capable of being incorporated within the IDP.

9. **Summary**

The proposed package of interventions is technically feasible overall. While some schemes will require further detailed design, land assembly, and utility coordination, no fundamental engineering or physical constraints have been identified that would prevent delivery.

Consistent with the vision & validate approach, interventions have only been excluded where there is clear evidence of deliverability risk. The remaining package therefore represents a realistic and deliverable set of measures which can be progressed through subsequent stages of design and implementation.

8.4 Funding

High-level indicative costs have been prepared for the transport intervention package, based on the level of design available at this stage and assumptions reflecting typical infrastructure requirements. These costs have been provided to the IDP process to support the consideration of potential funding sources and delivery mechanisms. The assessment demonstrated that, while costs will be refined through subsequent stages of design and development, the overall package represents a fundable and deliverable set of interventions.

9. Implementation & monitoring

9.1 Introduction

This section summarises the approach to delivering the vision-led and mitigation interventions described in this document.

This section also sets out our current thinking on how we monitor whether the Local Plan transport vision and objectives are being achieved on a site-by-site basis.

9.2 Proposed delivery framework and integration with business-as-usual

The interventions identified within the VLS have been developed to provide evidence of the transport measures required to support delivery of the Local Plan. All of the components of the package are considered necessary to achieve the Local Plan vision and objectives. Many are new, having been identified during the plan-making process. Some are strategic interventions required to unlock housing allocations or respond to the combined effects of several development sites. Others are smaller and are expected to be delivered by developers within or in proximity to their sites.

Some are previously identified proposals or measures which would be expected to be delivered as part of 'business as usual' through the future core programmes of agencies including GCC and National Highways. The delivery framework therefore distinguishes between standard Business-as-Usual (BAU) network management and plan-led strategic growth interventions.

This document provides the supporting evidence base for the Infrastructure Delivery Plan (IDP), including the rationale for interventions, their relationship with planned growth and an indication of potential delivery requirements. The IDP will establish the detailed delivery framework for these interventions, including responsibilities, phasing, funding mechanisms and integration with existing programmes. Some measures are expected to be delivered through the development process, while others may require coordination between delivering bodies and integration with wider transport programmes.

Further work will be undertaken through the IDP process to refine the delivery approach as the interventions are confirmed and the requirements for implementation become clearer.

9.3 Monitor and manage

'Monitor and manage' (M&M) is a best practice mechanism by which Cotswold District Council, as the planning authority, can require a developer to take action if the impacts of a development are not modelled and agreed at the time of planning consent. In example, it may require remedial action from a developer if the amount of car traffic to and from a site exceeds a previously agreed level.

To be effective, a M&M framework must be legally set in a S106 agreement during the consenting process. The make-up of M&M frameworks differs in terms of the approaches to monitoring travel behaviour, and the remedial measures required in response to monitoring.

At this point, the Cotswold District Council is not committing to establishing a M&M framework for the Local Plan sites but is discussing the practicalities of so doing with partners, particularly GCC. However, there are clear benefits; M&M is supportive of the concept of vision & validate as it allows the local planning authority to require corrective

action when indicators suggest that a development is not on track to meet the overall Local Plan vision. Regular course correction can result in better outcomes than remedial action once the development is fully complete.

10. Conclusions

10.1 Introduction

This concluding chapter shows how this Strategic Transport Assessment (STA) provides a robust, comprehensive, and legally compliant evidence base. It confirms that the transport implications of the spatial strategy have been fully evaluated and appropriately mitigated and integrated. Consequently, the transport evidence supports the Local Plan in satisfying all statutory tests of soundness and legal compliance required at Examination in Public (EiP).

10.2 Demonstration of soundness

In accordance with Paragraph 36 of the National Planning Policy Framework (updated December 2024), this assessment confirms that the Local Plan is sound regarding its transport impacts and strategies:

- **Positively Prepared:** The STA is based on an intervention strategy that seeks to meet the objectively assessed housing and employment needs of the Cotswold District Council. The transport measures described here and in the IDP proactively schedules infrastructure delivery to support sustainable growth using a vision & validate approach, rather than simply reflecting current and forecast patterns of congestion.
- **Justified:** Assessment included a rigorous multi-modal transport modelling process to iterate to a preferred package. The Local Plan as a whole relies on proportionate, evidence-based assumptions from the TRICS database and locally calibrated baseline data and models.
- **Effective:** The transport package is deliverable over the plan period. This document provides the evidence base for the IDP by setting out the rationale, relationship to planned growth, and potential delivery requirements for the interventions, with the detailed delivery framework, responsibilities, funding, and phasing to be developed through the IDP process.
- **Consistent with National Policy:** The STA reflects a shift away from traditional "predict and provide" methodologies. It adopts a vision-led approach that aligns with the National Planning Policy Framework, DfT's Local Transport Plan guidance and Active Travel England guidelines. It uses a sustainable transport hierarchy to maximise active travel opportunities and public transport capacity before proposing additional highway capacity and other mitigations. This aligns with the National Planning Policy Framework requirement for active travel and public transport opportunities to be provided to transport users, regardless of mitigating traffic impact.

10.3 Legal compliance

The preparation of the STA has strictly adhered to all relevant statutory requirements under the current anning system:

- **Planning & Compulsory Purchase Act 2004 (Section 19):** The STA ensures that the Local Plan policies contribute directly to the mitigation of, and adaptation to,

climate change. This is achieved through use of the sustainable travel hierarchy which prioritises positioning of developments and providing on-site amenities to reduce the overall need to travel, and use of low-carbon modes over private cars and vans.

- **Regulation 18 and 19 Compliance:** Transport evidence was published alongside the Local Plan consultation documents at both preferred options (Regulation 18) and publication (Regulation 19) stages. Responses from statutory consultees and members of the public directly influenced the final iteration of the transport mitigation package.
- **Alignment with the Planning and Infrastructure Act (2025):** The STA ensures that the transport evidence base is proportionate, relevant, and prepared to support fast-paced delivery. Funding structures and cross-boundary delivery proposals reflect the Act's focus on unlocking key growth zones efficiently.

The updated Local Plan will be submitted under the existing legislation in the Planning and Compulsory Purchase Act 2004. Ministry of Housing, Communities and Local Government (MHCLG) consultation on proposed revisions to the NPPF to reflect that these legislative changes are ongoing. Whilst they do not directly apply to the updated Cotswold District Council Local Plan, due regard has been made to ensure that this document remains sound and valid under the new regulations.

10.4 Demonstrating Effective Cooperation

The preparation of this STA involved continuous, constructive, and active engagement with key strategic partners compliant with the requirement for effective cooperation (NPPF).

- **Gloucestershire County Council (GCC):** Local Transport Authority and Local Highway Authority. The evidence presented in this STA was significantly shaped by engagement with transport planners and the transport development management team at GCC. GCC was a key stakeholder throughout the process and provided comments on all technical notes as well as allowing use of their strategic model, GC3M.
- **National Highways:** Highway Authority of the Strategic Road Network (SRN). Structured and detailed engagement was maintained throughout the Plan-making process with National Highways. Representatives sat on the Transport Working Group. Specific issues regarding impacts on the SRN, were frequently discussed and approaches to preparation of further evidence collaboratively developed.
- **Neighbouring Authorities:** Regular engagement has taken place with Gloucester, Cheltenham and Tewkesbury as promoters of the Strategic Local Plan (SLP), Wiltshire Council, Oxfordshire County Council, Worcestershire County Council, Warwickshire County Council, and Swindon Borough Council, through the Transport Working Group. The purpose of this engagement was to discuss potential cross-boundary and cumulative transport impacts, collaborate on the development of the evidence base, and consider potential mitigation measures and solutions.

10.5 Final summary conclusion

The transport evidence base is comprehensive, legally compliant, and sound. It establishes that the Local Plan's preferred spatial strategy will not cause a severe impact on the transport networks in the Cotswold District or neighbouring authority areas following mitigation. Instead, it provides a clear framework to achieve sustainable, vision-led growth. The plan is therefore ready for examination.