

Bath & North East
Somerset Council

Improving People's Lives

Bath & North East Somerset New Local Plan

Transport Methodology

Overarching Process

Bath and North East Somerset Council is preparing its New Local Plan for the period between 2022-2042. The New Local Plan will allocate sites for development, with an associated robust evidence base. The purpose of this note is to summarise the process that we are going through to ensure that the Local Plan is supported by a robust transport evidence base.

The diagram below shows how the Transport Methodology fits with the family of transport documents prepared to support the New Local Plan consultation.

Transport Vision and Objectives	Overarching Transport Context	Transport Methodology	Journey to Net Zero Transport Plans	Active Travel Masterplan Initial Engagement
<p>What are we aiming for?</p> <p>What are we judging ourselves against?</p> <p>How does it align with Corporate Priorities?</p>	<p>Corporate and Transport Policy</p> <p>Existing Transport Network</p> <p>Committed Projects</p> <p>Accessibility evidence</p> <p>Rationale for Spatial Strategy</p>	<p>Overview of transport evidence work</p> <p>Process and programme</p> <p>Transport Strategy and mitigation</p> <p>Modelling and assessment</p>	<p>Place-based Issues and opportunity</p> <p>Stakeholder engagement</p> <p>Themes that need addressing and options for doing so</p>	<p>Objectives</p> <p>Scope</p> <p>Route identification</p> <p>Approach</p> <p>Draft Plan</p>

Figure 1 Transport Evidence Documents

In March 2019 Bath and North East Somerset Council declared a Climate Emergency. The Climate Emergency commits the Council to provide the leadership to enable Bath and North East Somerset Council to achieve net zero by 2030. This includes **“a major shift to mass transport, walking and cycling to reduce transport emissions”**. Existing levels of congestion within the district impact on journey times and result in higher carbon and other harmful emissions, which lead to poor air quality, as well as having negative impacts on health and well-being of residents.

The transport challenge for the New Local Plan is to enable growth to happen sustainably. As a strategic approach, we are seeking to locate development in already accessible locations or those that can be made sustainable, to reduce the need to travel. This is alongside measures to rebalance our transport network so that is more equitable for all modes of travel. Less emphasis will be placed on accommodating private car usage than has been the case historically which has led to car reliant communities and our places becoming dominated by cars. This will achieve mode shift (i.e. a reduction in demand for car journeys and an increase in demand for other non-car modes of transport, such as walking and wheeling, cycling, public and shared transport) from existing car trips, as well as making new development as sustainable as possible. Achieving mode shift from existing trips will create “headroom” on the highway network to support growth. The evidence base needs to set out what is needed to achieve this, and to demonstrate that this can be delivered and will be appropriate.

The transport evidence base has involved an extensive gathering and review of data, evidence and information on key issues which affect the transport networks within the district. This is in line with the strive to achieve net zero, in accordance with the declaration of the Climate Emergency.

Figure 2 sets out the different elements of the transport evidence base, along with a summary of the Methodology. The work to compile this evidence base is in progress, to complete prior to the Plan being submitted for Examination.

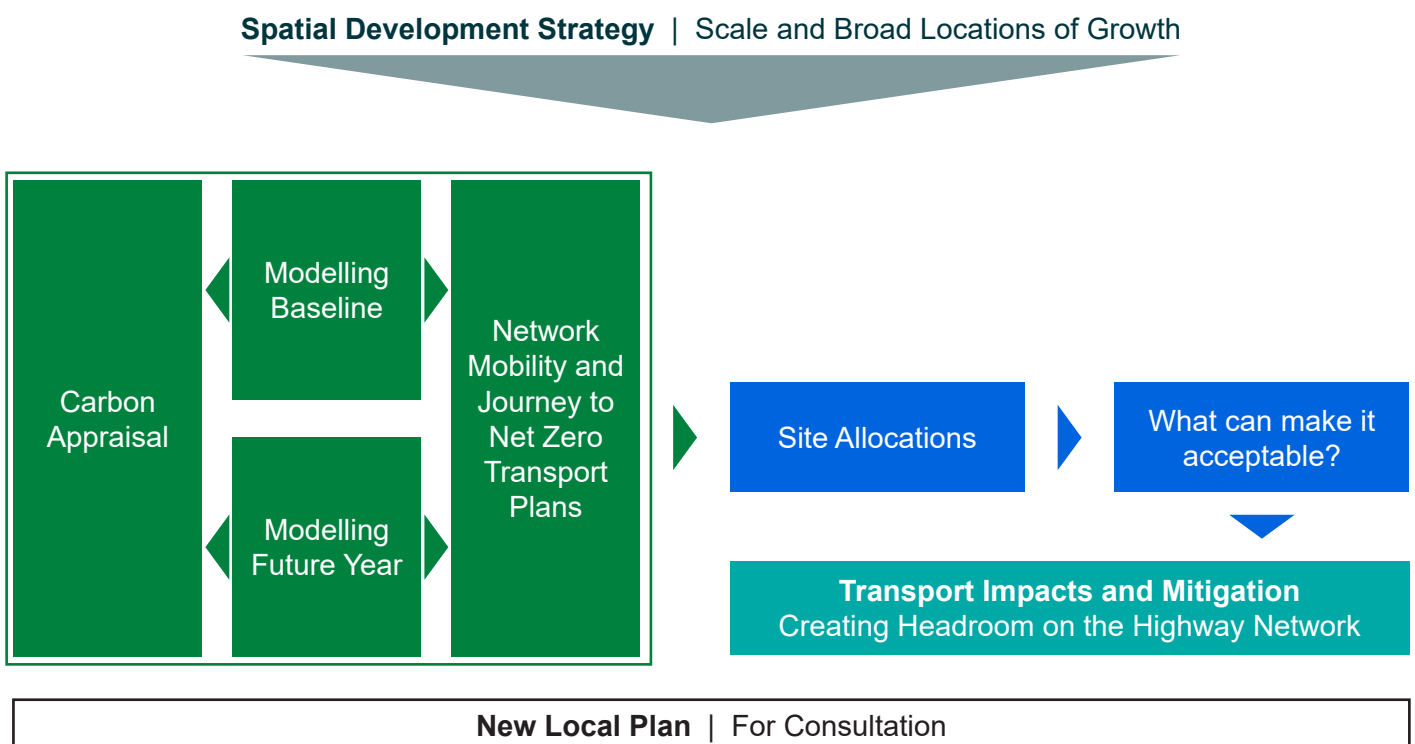


Figure 2 Transport Evidence Methodology

With regards to Network Mobility Interventions shown in Figure 2, this includes the Transport Interchanges and Active Travel Masterplan, since both of these elements will improve the transport network as a whole.

The key elements of the transport evidence base discussed in this Technical Note are as follows:

Journey to Net Zero (JNZ) Plans

- JNZ Plans to provide strategic approach to transport for Hicks Gate, Keynsham and Saltford, Somer Valley and Whitchurch Village, alongside the existing JNZ for Bath.

Network Mobility Interventions

- Active Travel Masterplan
 - Proposals for walking, cycling and wheeling across the district
- Transport Interchanges
 - Proposed improvements to the three existing Park and Ride sites for conversion to Transport Interchanges, as well as a new Transport Interchange at the Hicks Gate roundabout.
- Modelling and Mitigation
 - Strategic modelling using the WERTM Regional Model
 - Microsimulation modelling and mitigation developed using Vissim
- Carbon Modelling
 - Assessment of the transport-related carbon emissions associated with the New Local Plan



An important part of the evidence gathering stage is to engage with local stakeholders and members of the public to understand the issues which are important to them in their local area, so that the local needs are carefully identified. Therefore, a programme of stakeholder engagement has underpinned the development of the transport evidence base. This Reg 18 Options consultation is a key opportunity to gather wider feedback and ideas from the public as a whole, giving people a greater say over how we bring this Plan forwards. We intend to carry out further targeted consultation on transport interventions such as the Active Travel Masterplan and the Place Based Transport Strategies as they progress, to enable focused engagement.

The transport evidence base has been developed in parallel with other topic areas for the New Local Plan. The timescales for the preparation of the transport evidence base are set out in Figure 3.

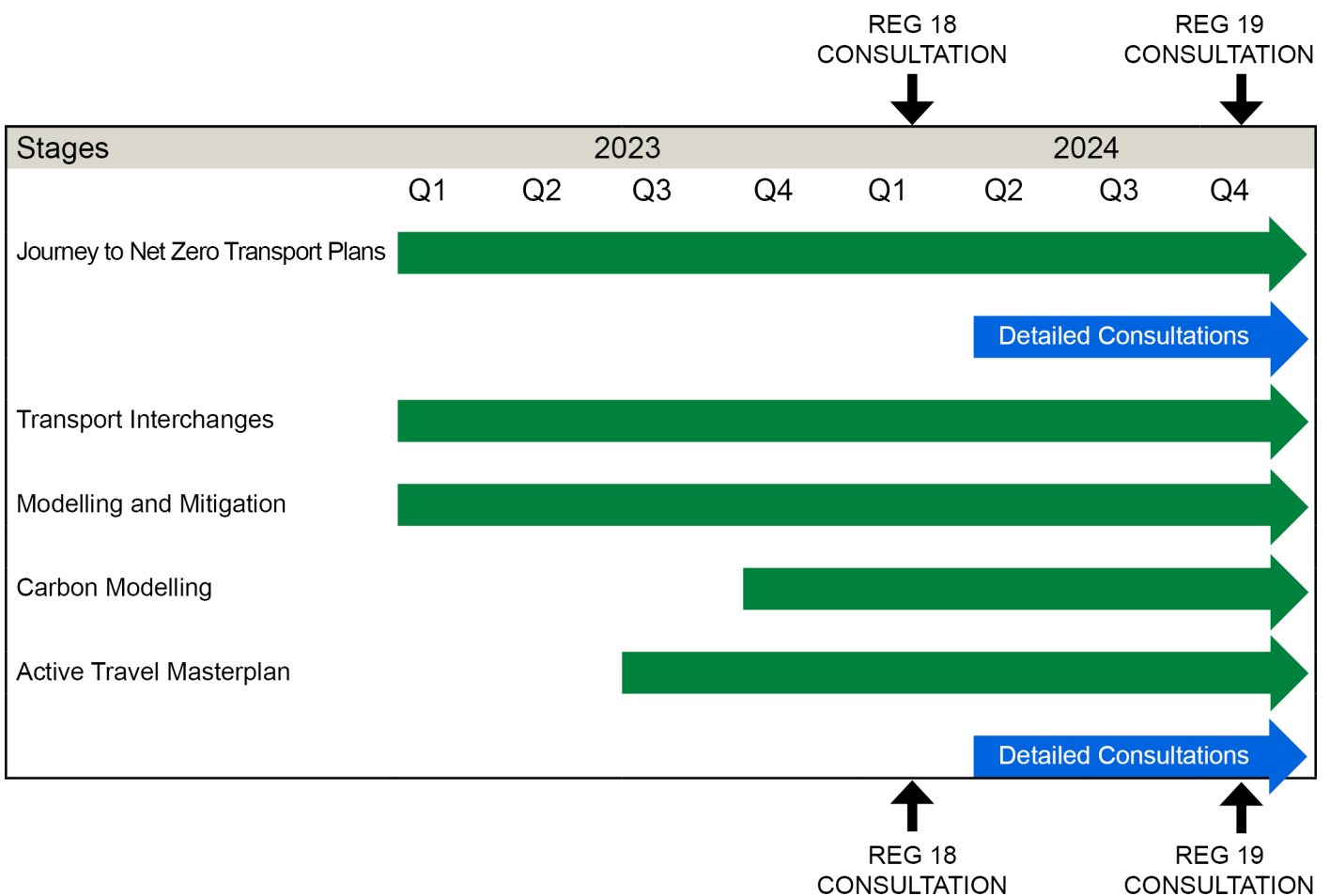


Figure 3 Transport Evidence Timeline

Journey to Net Zero Transport Plans

Journey to Net Zero (JNZ) Transport Plans are being prepared for the following places as potential locations for growth:

Hicks Gate

Keynsham and
Salford

Somer Valley

Whitchurch Village

The JNZ Plans align with the overarching transport vision and objectives for each area as well as identifying the challenges for planning and delivering transport improvements in each of the four locations listed above.

Strategic Place Frameworks (SPF) have also been prepared for each of the four locations identified above. This comprises a review of issues and opportunities and a broad overview of potential development locations. The SPFs draw upon the emerging JNZ work.

The approach to determine relevant transport interventions and improvements for each location has been based on the transport vision and objectives from Bath and North East Somerset Council for the New Local Plan. The transport Objectives are as follows:

- To reduce the need to travel, particularly by retaining and providing jobs, services and community facilities at locations close to residential areas;
- To reduce vehicle carbon emissions, improve air quality and minimise the negative impacts of traffic congestion whilst improving the health and wellbeing of residents by enabling more people to travel by active modes such as walking, wheeling and cycling;
- To improve public transport accessibility and build a network of fully integrated transport interchange hubs to improve connectivity between modes and support seamless, convenient, end to end mobility for longer journeys through the district;
- To deliver fairer economic growth through an accessible and socially inclusive transport system, by removing the barriers to travel and ensuring that social impacts are addressed; and
- To create better places which provide safe, and attractive neighbourhoods, and a climate resilient transport network.



The purpose of each JNZ Plan is to better understand the unique transport challenges and opportunities and set out our vision of a future transport system for each of these places over the next 20 years. The strategy looks to the long term and includes proposals needed to provide a transport system that is fit for purpose for those living, working and visiting the area. The strategy looks to develop a pathway for how future transport will contribute to addressing the climate emergency through improvements that enable more travel via sustainable modes. It considers why we travel and how those trips are made both now and in the future by walking, wheeling, cycling and bus. It signals the future direction of transport and seeks to enhance the sustainability of the existing place, in line with the transport Vision and Objectives.

Whilst supporting the aims of the Local Plan, each JNZ Plan is a stand-alone document. It will support delivery of growth proposals in the Local Plan, both by setting out the changes needed in our transport system to provide capacity for future growth and by increasing the sustainability of new development. At the heart of each JNZ Plan is the recognition that we cannot continue to predict and provide for worst case traffic levels with increased traffic capacity, enabling growth in car usage. We need to make a significant change in our current travel behaviour which requires the provision of attractive, affordable, accessible and sustainable travel options.

In order to identify potential transport interventions for each location the following tasks have been undertaken:

- A comprehensive policy review at a national, regional and local level, as well as a review of relevant studies;
- A study of the existing transport infrastructure, key facilities and amenities to understand existing levels of accessibility and consequently the potential to reduce the need to travel;
- An analysis of 2011 and 2021 census data sets has been carried out to determine the key characteristics of the area and identify existing travel patterns; and
- Engagement workshops with Bath and North East Somerset Council Officers and Community Stakeholders to identify issues and opportunities in each location, and collation of ideas for interventions.



Rural Growth Accessibility Assessment

- The 'Transport Accessibility Framework' (TAF) developed by the West of England Combined Authority (WECA) has been interrogated to understand how it can be used as the basis for assessing the accessibility of 16 villages located across the District, in the context of typically lower levels of rural accessibility as compared to urban areas.
- Since the current version of the TAF does not include the changes to bus services that took place in April 2023, a separate exercise has been undertaken it has been decided to that includes Public Transport to assess whether the bus service changes affect each village separately.
- The Assessment uses a scoring system to compare the current levels of connectivity for each village. It then considered whether there are any planned projects or improvements that could improve accessibility. This was then assessed to determine a score for future levels of connectivity for each village.
- The purpose of the Assessment is to understand which of the villages are potentially best suited to accommodate additional housing growth, from a transport perspective.

Journey to Net Zero Transport Plan for Bath

- The Journey to Net Zero transport plan aims to reduce the environmental impact of transport in Bath. The plan sets out a range of measures to tackle some of the biggest challenges society faces: combatting climate change, improving air quality, improving health and wellbeing, and tackling congestion. It sets out the changes needed to the transport system to create infrastructure and environments that will support the use of sustainable modes by making them a genuine alternative to the car. The plan was adopted in May 2022 and is the most up-to-date Transport Strategy for Bath.
- A significant proportion of the district's population live in rural areas. The Journey to Net Zero recognises the scale of travel to and from Bath from the wider area, and the need to improve the provision of sustainable travel on these routes. Therefore whilst the Journey to Net Zero focuses primarily on the City of Bath, it also recognises the importance of the travel corridors between the city and the wider district.



Network Mobility Interventions

Network mobility interventions play a key role in connecting places and enabling the use of sustainable travel methods by providing alternatives to private vehicles. Providing a network of public transport and active travel infrastructure gives people more choice about how they want to travel and creates places that people want to live and where businesses want to be based, promoting growth in the district. Network mobility interventions also play a key role in reducing carbon emissions produced by the transport network.

Transport Interchanges

The Joint Local Transport Plan 4 (JLTP4) states that:

“We support the concept of a ring of Park and Ride locations around the urban areas, to help tackle traffic and air quality problems in central areas. In Bath, the priority is to increase travel options on the arterial routes that enter our main urban areas to reduce single occupancy car use. Further expansion of existing sites will also be investigated contributing to carbon reduction in the congested city centre. In Bath we will explore and support options for increasing travel choices and reducing single occupancy vehicle use into our urban areas. We will investigate further expansion and improvement of the existing Park and Ride sites at Newbridge, Lansdown and Odd Down”.

Policy ST6 of the Local Plan states that

“Development of new or expansion of existing Interchange, including Park and Ride, sites will be permitted... provided that a number of criteria are met”.

Proposed future growth within the district will place more pressure on capacity at our Park and Ride (Park and Ride) sites where, during peak times, demand for spaces already exceeds the number of spaces available. Furthermore, the transport sector is evolving rapidly, with increased uptake of new technologies such as Demand Responsive Transport, Car Clubs and Micromobility challenging traditional ownership models. Therefore, to futureproof Park and Ride sites both in terms of increased demand and changes in travel patterns, Bath and North East Somerset Council is investigating the opportunity to transform existing Park and Rides to operate as Multi-Modal Transport Interchanges. The Transport Interchanges will incorporate a choice of modes at existing Park and Ride sites such as walking, cycling, more bus services, micro mobility, wheeling and car clubs. This would provide better connectivity and seamless journeys enhancing the sustainability

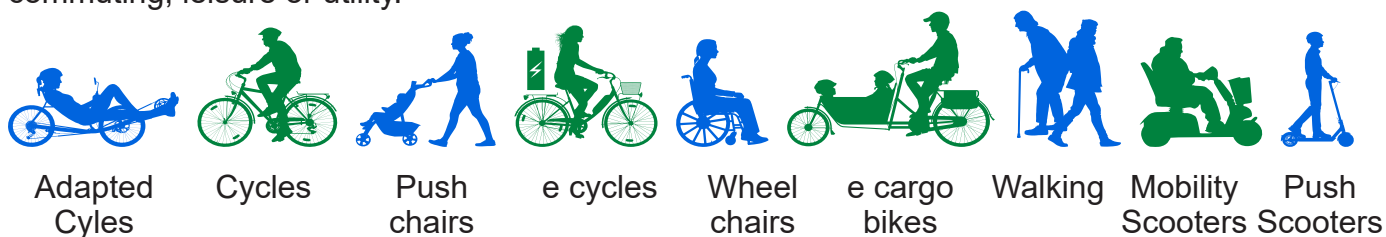
of our network and making it more inclusive. “Capacity” would be expanded by increasing the number of people, not necessarily cars, that can use the sites.

Therefore, it is proposed that the existing three Park and Ride sites within the District (Lansdown, Newbridge and Odd Down) will be upgraded to Transport Interchanges. It should also be noted that the wider strategy includes a new interchange at Hicks Gate, which would likely replace the existing Brislington Park and Ride, the evidence base for which is being led by WECA through the Bristol Bath Strategic Corridor (BBSC) project.

We are working on options to enable the three Park and Ride sites to be transformed into multi-modal transport interchanges. This includes identifying potential improvements to the transport corridors and networks around the sites, which alleviate barriers to travel or provide enhancements in the network.

Active Travel Masterplan

The Active Travel Masterplan will be a comprehensive plan that sets out the existing and future active travel infrastructure required to enable and provide for sustainable and healthy forms of transport in order to reduce traffic congestion and carbon emissions across Bath and North East Somerset. The plan will be for all types of active travel and all types of journeys whether for commuting, leisure or utility.



Bold action is needed to help create the places we want to live and work – with better connected, healthier and more sustainable communities. It will help deliver clean growth, by supporting local businesses, as well as making it more pleasant to move around and between our rural areas, towns and city.

By implementing infrastructure improvements and behaviour change campaigns, the Active Travel Masterplan will improve the safety, accessibility, and attractiveness of active travel options, while reducing carbon emissions from transport and promoting the health and wellbeing of residents.

The Active Travel Masterplan will support the existing Local Plan framework and call upon those policies already included in other transport plans and strategies including the Local Cycling and Walking Infrastructure Plan, The Journey to Net Zero transport plan and the Transport and Development SPD¹. These documents have set out the policy framework including what we want to achieve and why. The Active Travel Masterplan will take this a step further by identifying how we achieve this by identifying where the improvements and measures are needed to allow people to make the change in their travel habits as well as identifying how we can ensure that more of our roads and public spaces are able to be used by those on active modes.

The Active Travel Masterplan will cover the whole of Bath and North East Somerset Council area, including all urban and rural areas, major roads, and transport hubs. The plan will provide a holistic and coordinated approach to active travel across the Council area.

¹ Transport and development SPD | Bath and North East Somerset Council (bathnes.gov.uk)

Transport Modelling and Mitigation

The transport evidence base includes a transport modelling exercise. This is being undertaken at a strategic scale, using the West of England Regional Transport Model (WERTM), and local transport models for each place. This is used to build up a detailed and thorough understanding of how the network operates now, how it will operate in future, and what the effect of interventions (i.e. Local Plan growth and mitigation), will be. The traffic modelling is reflective of traffic conditions post covid. This has been confirmed by updated traffic surveys.

The purpose of undertaking a transport modelling exercise is to assist with deciding on the location and quantum of housing growth associated with the New Local Plan, and the measures required to accommodate that growth. This accords with the ‘Decide and Provide’ approach, which establishes the travel patterns to support low carbon and active lifestyles, and then provides the measures required to deliver on that aspiration.

West of England Regional Transport Model (WERTM)

The WERTM is a multi-modal model which covers the whole of the West of England, including Bath and North East Somerset Council. The WERTM is a strategic model that has been calibrated and validated in-line with guidance presented in the Department for Transport’s (DfT’s) Transport Analysis Guidance (TAG). The model represents traffic and travel patterns at a wider, more strategic level.

WERTM connects transport forecasting to higher-level aims and represents 2019 ‘base’ travel patterns in the West of England region. It represents travel via car, road-based freight (light and heavy goods vehicles), bus and rail and, at a high-level, walking and cycling. The model also includes the park and rides in the region. This strategic model can be used to forecast trip changes, by mode, in response to transport supply and demand.

The elements of WERTM are illustrated in Figure 4.

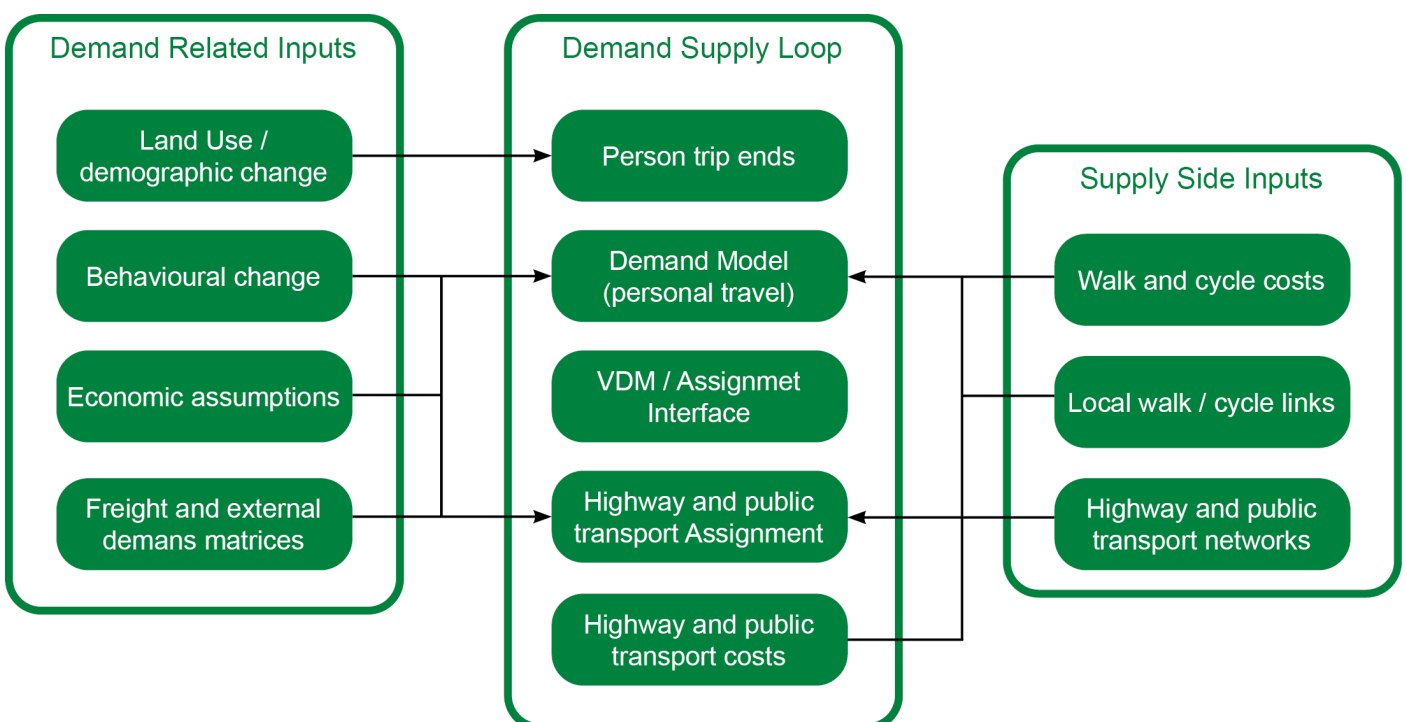


Figure 4 WERTM Components

A high-level summary of the modelling methodology is shown in Figure 5.

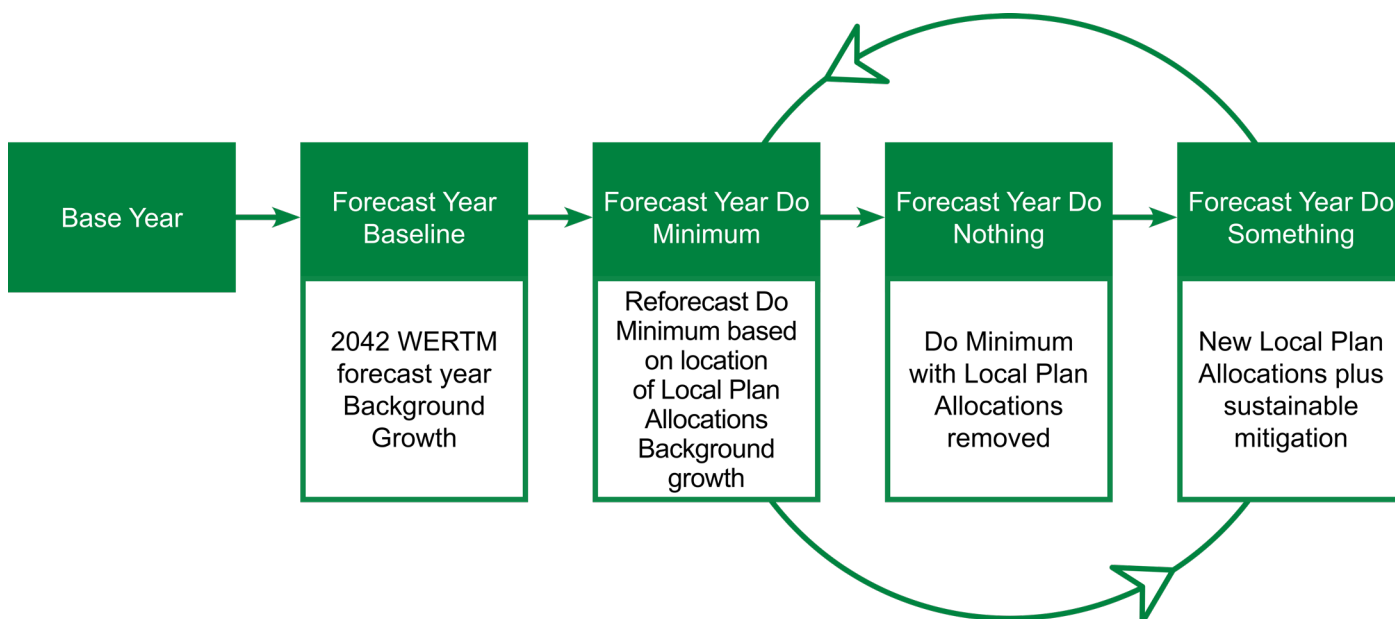


Figure 5 High-level Modelling Process

Base Year

Once the WERTM Base Model was finalised by WECA, a range of enhancements were undertaken to ensure that it is suitable for the modelling of the New Local Plan. This is to provide additional confidence in the use of the model at a Bath and North East Somerset Council-wide, rather than West Of England – wide, scale. This includes a check of traffic flows against a set of traffic count data to check that the model reflected traffic flows on the network and also an assessment to compare traffic levels pre and post Covid.

Forecast Year Baseline

WERTM uses a future forecast year of 2042, which is the end of the New Local Plan period when growth will have been delivered. Since this is sometime in the future, a check of those highway schemes and other transport schemes included in the uncertainty log was undertaken to ensure that this includes the relevant development and highway schemes that are expected in the period leading up to 2042.

Forecast Year Scenarios

WERTM was used to assess different future year scenarios, known as the ‘Do Minimum,’ ‘Do Nothing’ and ‘Do Something’ scenarios.

The ‘Do Minimum’ scenario assumes the Local Plan allocations are included alongside background traffic growth.

The ‘Do Nothing’ scenario assumes no Local Plan allocations come forward.

The ‘Do Something’ scenario includes the mitigation put in place alongside the Local Plan allocations. It is likely that there will be multiple Do Something scenarios modelled through the process, as the effectiveness of mitigation is tested and updated as part of an incremental process.

The outputs from these scenarios will be used to inform the strategy and will be fed into other areas of the Local Plan strategy including the Carbon Appraisal and Place-Based Models.

Place-Based Models

In addition to the strategic modelling undertaken using WERTM, the local impacts of proposed development and mitigation interventions will be assessed in more detail in each of the Places identified as potential locations for growth. Using the microsimulation software, Vissim, four individual models have been prepared.

The purpose of developing microsimulation models is to test and inform future year growth, specific development allocations and associated mitigation strategies in detail.

A summary of the methodology to produce each Vissim model is illustrated in Figure 6.



Figure 6 Base model Development Process

The base year models have been developed and are ready for use to assess the impact of the New Local Plan at a place-based scale. This provides key performance metrics to help sift, refine and evolve the New Local Plan.

Carbon Modelling

It is important to understand the carbon emissions generated from transport as a consequence of the growth proposed in the New Local Plan.

This study will provide a quantification for baseline and future transport carbon emissions across different development scenarios, and inform decision making on the type, location and scale of interventions planned through the New Local Plan.

A summary of the tasks for the carbon modelling is shown in Figure 7.

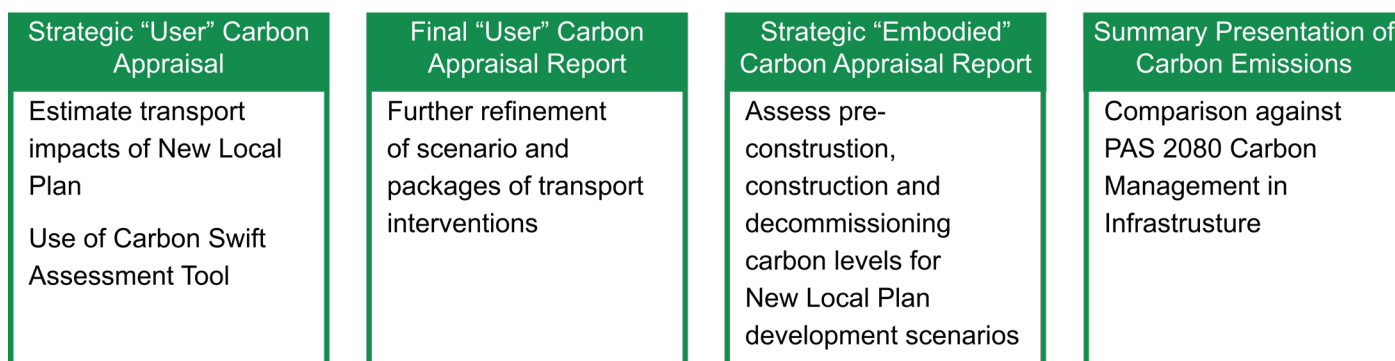


Figure 7 Carbon Modelling Methodology

- Step 1: Strategic “User” Carbon appraisal report – this report will set out an estimate of the transport impacts of the alternative Local Plan “what if” scenarios on “user” carbon, e.g. baseline carbon emissions, Business as Usual scenario, Net Zero Development scenario, and Net Zero Plan scenario. In this context, “User” Carbon describes the emissions from the end-users of new development. This uses the ‘Carbon Swift Assessment Tool for Transport’, using strategic data sources. The Carbon Swift tool provides a strategic summary of carbon emissions from transport for different scenarios up to 2050. By changing factors such as the modal share of different types of transport and the pace at which the vehicle fleet will electrify, Carbon Swift presents the impacts at both area and network levels.
- Step 2: Final “User” Carbon appraisal report: Based on the outputs and testing presented in the Strategic “User” carbon appraisal report, further refinement of scenarios and packages of transport interventions to meet the Net Zero targets are tested using WERTM and the Regional Emissions Model (REM). This feeds into the Final “User” Green House Gas appraisal report, with more detailed emission summaries and impacts of different elements of the Plan.
- Step 3: Strategic “Embodied” Carbon appraisal report – this report sets out a high-level estimate of the carbon embodied impacts of the refined Local Plan development scenarios. “Embodied” Carbon’ means the carbon footprint of a building or infrastructure project before, during and after its construction. The energy use and carbon emissions associated with the planned development can be estimated based on the type, quantum and timing of proposed development and applying our current understanding of current and future Building Regulation standards for energy consumption. Government predictions of future carbon emissions are used to project this forward to agreed time periods to show the impact of the proposed new development if local policy goes no further than national standards.



Summary and Conclusion

The transport evidence base comprises several different elements which have been described in this Note. Paragraph 16 of the National Planning Policy Framework (NPPF 2023) sets out what Plan-making should do. The six components of paragraph 16 are illustrated below, along with how these are being met through the transport evidence base.

(a) be prepared with the objective of contributing to the achievement of sustainable development

The transport Vision and Objectives make clear that priority is given to sustainable modes of transport

There is a presumption against new road building

(b) be prepared positively, in a way that is aspirational but deliverable

The transport evidence based illustrates the ambitious approach being taken to transform the local transport networks

It is underpinned by transport modelling to provide the empirical evidence

(c) be shaped by early, proportionate and effective engagement between plan-makers and communities, local organisations, businesses, infrastructure providers and operators and statutory consultees

The process has been shaped by public engagement with key local stakeholders at a number of consultation workshops

(d) contain policies that are clearly written and unambiguous, so it is evident how a decision maker should react to development proposals

The transport policies are consistency across the transport evidence base

The focus is on creating headroom on the highway network and ensuring growth is delivered in the most sustainable way possible

(e) be accessible through the use of digital tools to assist public involvement and policy presentation

Accessible version of the documents forming the transport evidence base will be provided

(f) serve a clear purpose, avoiding unnecessary duplication of policies that apply to a particular area (including policies in this Framework, where relevant)

The transport policies have been developed to align with national policy set out within the NPPF

National policies have been translated into a local context taking into account the challenges and opportunities within Bath and North East Somerset

To conclude, when tested against the requirements of NPPF and the Plan-making guidance, this Methodology provides a robust evidence base and is proportionate to the scale of the New Local Plan.

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