

Technical Report – Sustainable Transport Improvements and Potential Modal Shift

**Proposed Residential Development
Lower Berse Farm, Wrexham**

Prepared for Redrow Homes North West

July 2024

Doc Ref: SH/210187/TR/3

Prepared by:

Stephen Heritage

Checked by:

David Roberts

Document Revision Control

Revision	Date	Status	Prepared By	Approved By
01	15.03.24	Planning	SH	DR
02	22.03.24	Planning	SH	DR
03	18.07.24	Planning	SH	DR

Colwyn Chambers
19 York Street
Manchester
M2 3BA

T: 0161 832 4400

E: info@scptransport.co.uk
W: www.scptransport.co.uk



This document has been prepared for the titled project or named part thereof and should not be relied upon or used for any other project without an independent check being carried out as to its suitability and prior written authority of SCP being obtained. SCP accepts no responsibility or liability for the consequence of this document being used for a purpose other than the purposes for which it was commissioned. Any person using or relying on the document for such other purposes agrees and will by such use or reliance be taken to confirm his agreement to indemnify SCP for all loss or damage resulting there from. SCP accepts no responsibility or liability for this document to any party other than the person by whom it was commissioned.

CONTENTS

1.0	INTRODUCTION	3
2.0	POLICY CONTEXT	6
3.0	TECHNICAL APPROACH	10
4.0	RESEARCH & DATA.....	13
5.0	PUBLIC TRANSPORT	15
6.0	ACTIVE TRAVEL	19
7.0	PROPOSED SUSTAINABLE TRANSPORT MEASURES FOR LOWER BERSE FARM DEVELOPMENT	24
8.0	SUMMARY OF MODAL SHIFT POTENTIAL.....	26

ANNEXES

- A Possible Bus Network Enhancement Options in Western Wrexham
- B Proposed Active Travel Network in Western Wrexham

1.0 INTRODUCTION

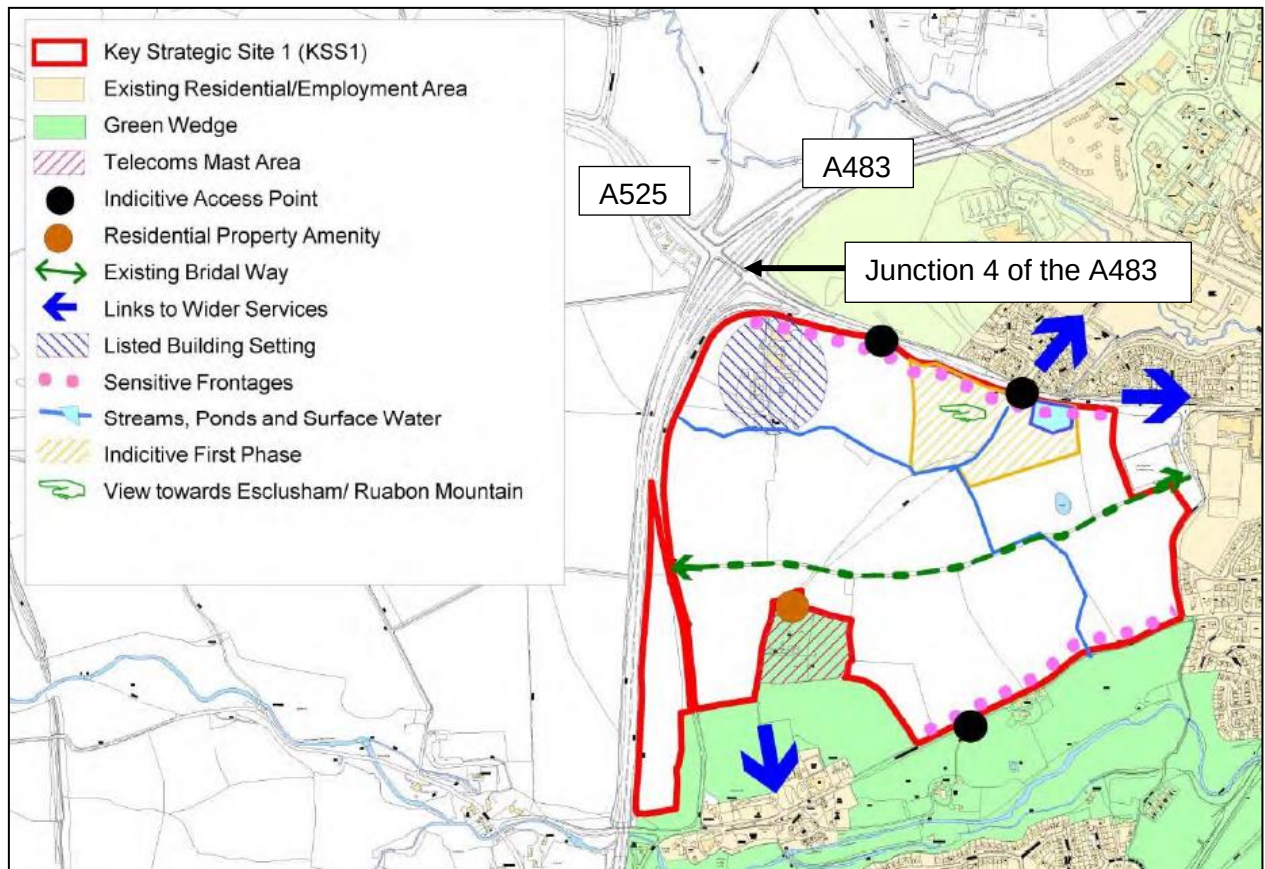
General

- 1.1 SCP have been appointed by Redrow Homes North West to provide specialist transport planning and engineering advice in support of a proposed residential development on land at Lower Berse Farm south of Ruthin Road, Wrexham. The proposed development will provide up to 1450 dwellings. The residual land not within the Applicant's control has capacity for up to 70 dwellings; hence, a total of 1520 dwellings has been considered in these assessments.
- 1.2 SCP submitted a Transport Assessment (TA) to Wrexham County Borough Council (WCBC) on 6th February 2024. WCBC have provided initial comments on this TA. The Welsh Government (WG) and WCBC have also provided broad verbal comments in a series of meetings.
- 1.3 In discussions the Welsh Government has clarified the revised approach with regard to highway capacity enhancement schemes for new developments. A 2-step approach is required, whereby a strategy to achieve modal shift to sustainable modes (eg. public transport, walking, cycling) is considered first. Once this has been assessed and quantified, highway capacity improvements can be considered to mitigate the residual vehicular trips. Any highway capacity improvements should comprise the minimum possible scheme and should not create additional capacity for general traffic.
- 1.4 A draft version of this report was issued to Welsh Government and Wrexham County Borough Council in March 2024. The draft findings were discussed in a meeting held in May 2024 and some written feedback was subsequently received from Welsh Government. The report has been revised in line with this feedback.
- 1.5 This Technical Report presents the findings of the first step of the 2-step approach set out above. It sets out the sustainable transport measures proposed in conjunction with the Lower Berse Farm development and considers how these might fit into Wrexham's own plans for development of its sustainable transport infrastructure and services.

Planning Background

- 1.6 The Lower Berse Farm site is referred to as a Key Strategic Site (KSS1) in Wrexham's adopted Local Development Plan (LDP) [Adopted Version December 2023] which covers the period 2013-2028. The extract of the LDP showing the location of the site is shown in **Figure 1.1** below.

Figure 1.1: KSS1 Site Location Plan



Source: Wrexham LDP (Adopted Version 2023)

- 1.7 The LDP specifically refers to highway improvements to address known infrastructure capacity constraints at Junction 4 of the A483(T) Road with the A525 as enabling infrastructure. However, WG have confirmed that such infrastructure should be considered in light of the latest policy context and the 2-step approach set out above.

Scope and Structure of Report

- 1.8 The structure of this report is as follows:
- Chapter 2 – summarizes relevant national and local policy and strategy documents
 - Chapter 3 – sets out the technical approach used in this analysis
 - Chapter 4 – provides an overview of relevant research and data on the topic
 - Chapter 5 – estimates the potential for modal shift from bus enhancement measures
 - Chapter 6 – estimates the potential for modal shift from active travel measures
 - Chapter 7 – summarizes sustainable improvements proposed in conjunction with the Lower Berse Farm development

- Chapter 8 – summarizes the findings including the potential for modal shift both from the Lower Berse Farm development and the wider Wrexham area

2.0 POLICY CONTEXT

- 2.1 There are a number of policy and strategy documents which are relevant to the subject matter of this Technical Report. The relevant sections are briefly summarised below.

Policy Context - Planning Policy Wales (PPW)

- 2.2 In terms of national transport policy, the latest 11th edition of PPW was published in February 2021 by the Welsh Government and sets out a framework for the Welsh planning authorities to prepare their development plans. Chapter 4 of PPW sets out the approach to Transport. Specific points which are relevant to this analysis are summarised below.
- 2.3 Paragraph 4.1.1 of PPW states that *“The planning system should enable people to access jobs and services through shorter, more efficient and sustainable journeys, by walking, cycling and public transport. By influencing the location, scale, density, mix of uses and design of new development, the planning system can improve choice in transport and secure accessibility in a way which supports sustainable development, increases physical activity, improves health and helps to tackle the causes of climate change and airborne pollution.”*
- 2.4 Paragraph 4.1.9-4.1.10 of PPW also states that *“The Welsh Government is committed to reducing reliance on the private car and supporting a modal shift to walking, cycling and public transport. Delivering this objective will make an important contribution to decarbonisation, improving air quality, increasing physical activity, improving the health of the nation and realising the goals of the Well-being of Future Generations Act. The planning system has a key role to play in reducing the need to travel and supporting sustainable transport, by facilitating developments which:*
- *are sited in the right locations, where they can be easily accessed by sustainable modes of travel and without the need for a car;*
 - *are designed in a way which integrates them with existing land uses and neighbourhoods; and,*
 - *make it possible for all short journeys within and beyond the development to be easily made by walking and cycling.”*

The Active Travel (Wales) Act 2013

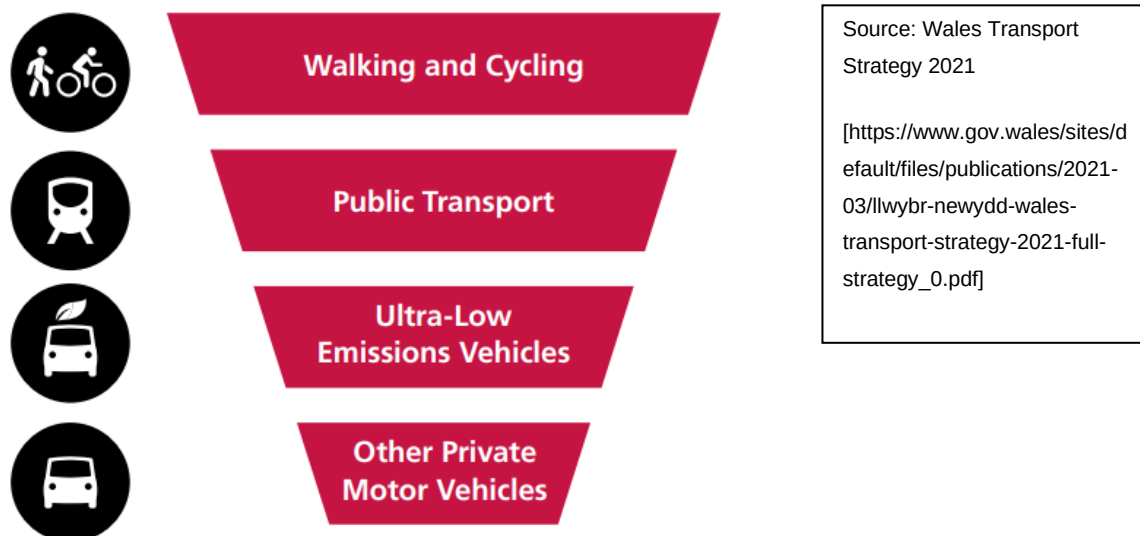
- 2.5 The Active Travel Act was passed into legislation in 2013. The act aims to make walking and cycling the most natural and normal way of getting about. The act requires local authorities in Wales to produce maps of walking and cycling networks, and to deliver year on year active travel

improvements along the mapped routes and their related facilities (toilets, cycle parking etc.). The Act also requires highways authorities in Wales to make enhancements to routes and facilities for pedestrians and cyclists in all new road schemes.

- 2.6 Funding guidance in relation to the Act states that “*Local authorities are strongly encouraged to bring forward proposals for scheme development or pre-works funding that closely align with the grant objectives, and in particular should focus on schemes likely to encourage modal shift.*”

Wales Transport Strategy 2021

- 2.7 The Wales Transport Strategy 2021 sets out the Welsh Government’s overall transport policy. Amongst other things, it is clear in its goal of promoting a sustainable transport hierarchy as shown in the graphic below.
- 2.8 The Strategy states that “*Based on our current analysis, we have set a target of 45% of journeys to be made by public transport, walking and cycling by 2040. This represents an increase of 13 percentage points on the estimated current mode share of 32%.*”



Adopted Wrexham Local Development Plan 2013 - 2028

- 2.9 The Wrexham County Borough Council LDP was adopted on 20th December 2023 following an Examination of the Plan which took place between 2019 and 2022. Several of the LDP policies are directly relevant to the subject matter of this Technical Report. These include:

Policy T1: Managing Transport Impacts

- 2.10 *“Facilitate increased journeys by more sustainable modes of travel first by walking and cycling, then by public transport and finally by private motor vehicle”*
- 2.11 *“The purpose of this policy is to encourage the use of the transport hierarchy to manage traffic impacts arising from development. Development should in the first instance be accessible by walking and cycling, then by public transport and finally by private motor car with the approach to managing traffic impacts reflecting this.”*

Policy T2: Active Travel

- 2.12 *“Walking and cycling infrastructure is an integral part of the overall design of the scheme and makes a positive contribution to the distinctiveness of communities and places; The purpose of this policy is to improve the current Active Travel Network and increase opportunities to improve levels of walking and cycling by ensuring new developments contribute to the advancement of the network and include design features and facilities that help to promote Active Travel as a viable alternative to the private car”.*
- 2.13 *“Research undertaken as part of the development of the Council’s Sustainable Urban Mobility Plan in 2016 (Wrexham Connected) has highlighted that a significant proportion of trips in Wrexham are relatively short (under 5 miles). Many of these trips could be undertaken by foot or cycle, helping to reduce pollution arising from road traffic, benefit human health and well-being and help reduce environmental pollution and climate change.”*

Policy T3: Passenger Transport

- 2.14 *“Enhanced or new passenger transport services connecting communities to areas of opportunity including employment, education, health facilities, retail, leisure and social activities are proposed including...appropriate new highway infrastructure improvements that afford priority to bus based passenger transport over the private car.”*
 - 2.15 *“Ensuring the bus is a more attractive and practical travel option is crucial to reducing car dependency and improving overall accessibility. Despite a strong commercialised core network, the bus is not currently a particularly attractive option for many journeys in Wrexham with passenger numbers declining. The majority of routes on the network are radial and converge on the City Centre.”*
 - 2.16 *“An integrated and co-ordinated bus network is essential to the vitality of our urban centre and improved connectivity has a vital role to play in encouraging businesses to locate within the area,*
-

in getting people to and from work, and for access to services such as education and health, as well as to leisure activities and for shopping/personal business. The effects of improved bus services can bring about improvements in travel times, reliability, comfort and fares, as well as providing a realistic alternative to the car.”

3.0 TECHNICAL APPROACH

Overview

- 3.1 In recent years there has been a growing consensus that the previously adopted approach to development transport planning – often labelled “predict and provide” – led to a reinforcement of the status quo and a range of unintended consequences, including
- the potential over-provision of highway capacity which, in turn, can induce motorised traffic (undermining efforts to reduce climate change impacts from the transport sector);
 - the potential under-provision of walking and cycling infrastructure or public transport services
- 3.2 An alternative approach to “predict and provide” has been devised, referred to as “decide and provide” (or “vision and validate”). This approach offers the opportunity for more positive and integrated transport and land use planning with more meaningful application of the modal hierarchy, making sustainable modes central to achieving the vision for a particular site or development.
- 3.3 The approach is vision-led, evidencing the future using scenarios, providing for the best rather than worst case in terms of transport infrastructure, and adaptively responding to the unfolding future through monitoring and evaluation. This approach is clearly aligned with both the Welsh Government and WCBC transport policies, as set out in Chapter 2.
- 3.4 There is no universally agreed approach to quantifying likely modal shift as a result of the implementation of sustainable transport measures. Outcomes can be highly dependent upon the specifics of a particular area / location eg. topography, demographics etc. This Technical Report adopts a bespoke method drawing upon a mix of research, data and first-principles analysis.
- 3.5 The analysis focuses on travel to/from work trips for three main reasons. Firstly, these generally make up the largest share of total daily travel. Secondly, such trips usually create the largest impacts on a given transport network. Thirdly, on a practical level, the majority of available evidence and tools relates to such trips.
- 3.6 The adopted approach first considers specific sustainable transport interventions proposed in conjunction with the Lower Berse Farm Development. It then considers how these might tie in with wider sustainable measures proposed for Wrexham as a whole by WCBC. The analysis considers possible modal shift outcomes in line with the scenarios described below.
-

Scenarios

- 3.7 A range of futures is possible – based upon changes in society beyond the immediate influence of how a new development is designed, and based upon efforts to shape the future through planning and design in line with having a vision. Scenario planning is a method for addressing such uncertainties. In preparing a transport evidence base, the focus should not be on what will happen but upon what could happen and what it is intended should happen.
- 3.8 Three scenarios are considered in this Technical Report:
- **"Baseline"** – reflecting the current situation and a “business as usual” future
 - **"Plausible"** – reflecting a credible change in the transport situation (that has been achieved elsewhere in the UK)
 - **"Possible"** – a more long term, aspirational future transport situation (as has been achieved in selected global jurisdictions)

Research & Data Review

- 3.9 A ‘light touch’ literature review has been undertaken to understand relevant available research on the potential achievable scale of modal shift resulting from sustainable transport interventions. This provides a useful cross-check for the estimated outcomes from the first-principles analysis. The TRICS trip rate database was also interrogated to understand whether there is any evidence related to changes in trip rates.

Public Transport

- 3.10 A “first principles” assessment of likely patronage resulting from bus service enhancements proposed in conjunction with the Lower Berse Farm Development has been undertaken. The assessment makes use of ONS 2021 census data and professional bus operations experience to consider the potential demand for new or extended local bus services based on bus mode shares and similar sized new developments in the local area.
- 3.11 This assessment considers how these enhancements might fit with Wrexham’s wider plans for enhancing their bus network. The assessment also considers how the increase in bus patronage might result in fewer private car trips.

Active Travel

- 3.12 The analysis of cycling trips presented in this Technical Report uses the DFT Cycling Propensity tool to estimate what might be feasible under different scenarios.
- 3.13 The PCT is a nationwide (England and Wales) web-based tool for estimating cycling potential which covers travel behaviour data for commuting and travel to school based on the 2011 Census. The PCT presents both baseline data and how cycling would change under different scenarios.
- 3.14 In all the PCT scenarios (apart from gender equity) cycling potential is calculated using a function based on trip distance (people are more likely to cycle a shorter trip than a longer trip) and hilliness (people are less likely to cycle a trip involving hills).
- 3.15 For the purposes of this Technical Report, the relevant scenarios would be:
- **Government Target [Near Market] scenario** (assumes a doubling of cycle mode share nationally, to 3.7% cycle mode share) accounting for age, gender and other factors that affect the likelihood of cycling.
 - **Go Dutch scenario** (assumes a very ambitious 22-fold increase in cycling nationally, to 41.0% cycle mode share) by looking at how likely a Dutch person would be to cycle that trip
- 3.16 The analysis of walking trips presented in this Technical Report comprises a “first principles” assessment looking at facilities within walking distance, walk times and tying in with evidence of trip internalisation and trip localisation.

Limitations

- 3.17 As mentioned above, there is no universally agreed approach to quantifying likely modal shift as a result of the implementation of sustainable transport measures. Many such interventions are relatively recent and, as such, the full effects may not yet have materialised. Also, to rigorously demonstrate that a particular set of interventions have resulted in modal shift, high-quality before and after survey data is required. Such data is costly and time-consuming to collect and therefore is in relatively short supply.
- 3.18 This analysis seeks to assemble the best available data to demonstrate what could be achieved in terms of modal shift in and around the Lower Berse Farm Development in western Wrexham. While the limitations are acknowledged, the analysis is clearly aligned with the spirit of the Welsh Government’s transport strategy and WCBC’s LDP.
-

4.0 RESEARCH & DATA

Overview of Relevant Research

- 4.1 There is a wealth of information available from across the UK regarding various policies and tools to encourage the use of sustainable transport modes as opposed to private modes. The evidence base on the quantified effects of such policies and tools is less comprehensive. This is unsurprising since it is well known as a challenging task in transport planning circles.
- 4.2 Notwithstanding the above, there is an emerging body of evidence as to the potential scale of modal shift away from private car trips as a result of specific sustainable transport interventions. A ‘light touch’ literature review has been undertaken to summarise relevant findings from both academic and non-academic sources.

Data

- 4.3 Interrogation of the TRICS database was undertaken to understand whether there is any relevant evidence on historic trip rate trends. It was not possible to identify specific comparable sites with a sufficient time series of surveys to make a direct comparison with the Lower Berse Farm Development. However, TRICS undertook technical research into trip generation trends in 2019 covering both vehicular and multi-modal contexts for specific land use categories including residential.
- 4.4 While the findings were not definitive, they did point towards “...a general apparent reduction in vehicular trips over time. This is also evident to a certain degree for total people trips, although these appear to be more dynamic, with individual modes showing more inconsistent trends. However, the research suggests an overall, general shift towards non-vehicular modes over time has taken place.” [Source: TRICS Good Practice guide 2021, p.15, para 9.4]

Summary

- 4.5 **Table 4.1** summarizes some key types of sustainable transport intervention along with the resulting estimated range of modal shift away from private car trips. The results are categorized into “Plausible” and “Possible” scenarios as defined in Chapter 3.
- 4.6 Results for the “Plausible” scenario indicate a potential modal shift in the range of 1-9%, whereas the results for the “Possible” scenario can be 40% or more.
- 4.7 There are, by necessity, a number of caveats:

- Findings may be location specific; that is, what works in one part of the country may not work in the same way in another
- Much of the evidence relies on reported trip data from surveys, rather than measured trips

4.8 In terms of broad trends, research strongly suggests that area-wide measures are more likely to be successful in inducing modal shift than stand-alone measures. The research also indicates that the best point to target behavioural interventions to achieve modal shift was during ‘trigger points’ in people’s lives such as moving home. This finding supports the concept of implementing sustainable transport interventions at the opening of the Lower Berse Farm Development.

Table 4.1: Summary of Possible Modal Shift from Private Car due to Specific Interventions

Intervention	Source	Change in Modal Share [% Shift Private Modes to PT / Active Modes]	
		Plausible	Possible
Area-wide cycle/walking networks - Multiple Locations	(a)	0.5-6%	50-60% ⁽²⁾
Area-wide cycle/walking networks - Cardiff	(b)		41%
Travel Plans	(c)	~9%	
Smarter Choices Smarter Places – Scotland	(d)	~2%	~9%

Notes:

1. Modal shift defined in terms of the number of trips
2. On flagship routes

Sources:

- (a) DfT CWIS Active Travel Investment Models: Model structure and evidence base
Technical appendix 4: Overview of evidence on increasing active travel [Sept 2019]
- (b) Sustrans
<https://www.sustrans.org.uk/our-blog/opinion/2018/november/what-is-the-carbon-emission-reduction-potential-of-active-travel>
- (c) Household travel surveys undertaken by Socialdata & Sustrans
Part III Chapter 13. Evidence from household travel surveys
- (d) Smarter Choices Smarter Places – Scotland
Transport Scotland: Best practice in active travel and its associated benefits - Literature review

5.0 PUBLIC TRANSPORT

Measures Relating to Lower Berse Farm Development

- 5.1 The centre of the site, to the south of Ruthin Road is over 400 metres from the nearest bus services at Croesnewydd Road and therefore new service options have been considered for linking the development site with key locations in Wrexham. The operational enhancements considered are set out in the **Table 5.1** below.

Table 5.1: Bus Options Considered

Bus Operations Enhancement Options	
i.	Service extension or diversion of Town Link 2
ii.	A new service A operating north from the site via Maelor Hospital, Central Station and Wrexham Bus Station.
iii.	A new service B operating east from the site via Ruthin Road (A525), Cambria College, Bradley Road A5152, Central Station and Wrexham Bus Station.
Alternative & Innovative Options	
iv.	A demand responsive or taxibus solution (particularly in the early site occupation period)

- 5.2 **Annex A, Figure A1** shows the new and extended / diverted service options diagrammatically, along with key trip generators / attractors that they may serve.

Service Extension or Diversion

- 5.3 Detailed analysis of the Town Link group of services indicates that the existing TL2 service could be diverted to serve the Lower Berse Farm Development. Two options have been considered: a longer loop through the development (Extension Option 1) or a shorter loop (Extension Option 2). The selection of a preferred option would depend upon consideration of detailed operational factors such as recovery time and driver break time.

New Services

- 5.4 New residential developments are often served by a completely new bus service, operating either peak only or peak and off peak, Monday to Saturday. The focus can be only on meeting the specific needs of new residents, but more successful services also should consider the travel needs of the local community and is usually best when integrated with the existing bus network. As such the service could be a showcase for the site, with high quality operating partner and good

frequencies, as opposed to a bare minimum tendered low cost service, just sufficient to meet mode shift targets but not offering any real amenity.

5.5 Two service options have been, Service A and B, which have different routings, albeit broadly replicating TL2, serving different destinations on their route and would therefore achieve different trip objectives:

- A new service A operating north from the site via Maelor Hospital, Central Station and Wrexham Bus Station – This service would connect with the hospital and employment sites to the north of the development, so both peak and off peak travel will popular
- A new service B operating east from the site via Ruthin Road (A525), Cambria College, Bradley Road A5152, Central Station and Wrexham Bus Station – this service is likely to be marginally quicker into the city centre, and serves the college

Alternative and Innovative Options

5.6 Some initial assessment of a taxibus or a Demand Responsive Transit (DRT) solution for early stages of occupation has also been considered. During the sites initial occupation, a taxibus service, to a fixed timetable or on demand, could be operated due to the lower patronage level. It is recognised that encouraging the use of public transport should be promoted by the introduction of full timetabled services as soon as possible from early occupation, but if there is insufficient demand while the site is not fully occupied, a negative image of an empty bus would be portrayed. A staged implementation is potentially the best use of resources.

Wider Measures for Wrexham

5.7 The Wrexham County Borough Council LDP (*Policy T3: Passenger Transport*) proposes “..Enhanced or new passenger transport services connecting communities..” and “...appropriate new highway infrastructure improvements that afford priority to bus based passenger transport over the private car..”

5.8 One specific proposal would be the development of the Wrexham Gateway Transport Hub in the vicinity of the Wrexham General railway station. The new transport hub aims to achieve the following:

- Improved interchange facilities between modes (for example if interchanging between rail and onward bus).
- Improved walking and cycling connectivity to/from the railway station and nearby destinations such as city centre, STōK Racecourse and Wrexham University.

- Improved user experience at the railway station.
- Enhanced setting of the station and welcome to the city of Wrexham.

5.9 A WeITAG stage two (outline business case) study to progress proposals for the Wrexham Gateway transport hub is currently being developed.

Modal Shift Potential - Bus

- 5.10 The four options identified would all, to an extent meet the needs of the new residents on the development site and existing communities nearby. However, it is recommended that a new Service A should be developed to maximise mode shift and secure the largest reduction of peak hour car trips.
- 5.11 A review of ONS 2021 census data has identified that in Wrexham West (W02000088- MSOA Wrexham 011) 2.9% of people travel to work by bus (the Welsh average is 4.2%). The bus mode share likely reflects the higher level of car ownership in the area. As a sense check, previous mode share data for the journey to work was also reviewed. In the 2011 census, the bus mode share was 5% and in 2001 census, the bus mode share was 4%. This shows that the bus mode share has significantly declined, albeit the 2021 census was undertaken in March during the final stages of the pandemic. The long term trend is shown in patronage data nationally (and in Wrexham), notwithstanding recent operator, local and national government efforts to attract passengers back post COVID. Nationally in 2021 the bus mode share for journey to work was highest in Cardiff at 4.7% and in England only over 10% in parts of London, Birmingham and Manchester.
- 5.12 First principles calculations for the Lower Berse Farm Development in terms of journey to work trips are set out below:
- Average of 2.3 people per household in Wales and 2.27 for Wrexham,
 - Lower Berse Farm Development with ~1,500 units could have a resident population of approximately 3,450.
 - 67.2% of the resident population aged 16-64 (Wrexham West MSOA)
 - So $3450 \times 67.2\% = 2318$ working age population
 - Average economically active population 16 and over, is 65.5% for Wrexham West
 - So $2318 \times 65.5\% = 1,518$ peak work trips
 - Applying a plausible bus mode share of 5% gives 76 peak period journey to work bus trips.
- 5.13 Trips to schools and colleges may increase peak hour demand for bus travel, as although the Ysgol Clywedog, the closest secondary school is approximately 500m maximum from the

development site (and therefore pupils would easily be able to walk to school), the availability of a direct service would discourage parental trips to schools and colleges further away and improve the commercial viability of a new service. If anticipated secondary and further education trips to other Wrexham schools and colleges are added, there could be a further 1-2% peak period mode share uplift for buses.

- 5.14 The proposed improvement of bus services in western Wrexham would also generate additional off site demand. The scale of this off site demand would vary depending on the preferred service option. A high level estimate of 50 to 75 additional trips per day has been made. This could equate to a further 1% peak period mode share uplift for buses.
- 5.15 Overall, it is estimated that the existing 3% bus mode share for the Lower Berse Farm Development and adjoining areas could increase to somewhere between 5% and 8% following implementation of the proposed bus service enhancements and wider bus network improvements in Wrexham.

6.0 ACTIVE TRAVEL

Measures Relating to Lower Berse Farm Development

- 6.1 The internal layout of the Lower Berse Farm Development site and its immediate surroundings will be developed to give a high priority to safe and convenient cycle access. The site is within an acceptable cycle distance of a range of areas and associated facilities, cycling is considered to be a viable alternative to private car use for prospective residents of the site, particularly given that secure cycle parking is proposed. The site will be also developed with the highest importance given to the movement of pedestrians through the site and connecting to the existing pedestrian infrastructure outside of the site.
- 6.2 Based on the latest masterplan for the site (and subject to viability), it is proposed that the Lower Berse Farm Development should incorporate a primary school and local commercial centre (potentially including a nursery, shops, café, public house and community facilities). This range of facilities offers significant potential for trip internalisation (that is, trips being made within the development, rather than external to it). Such short trips are much more likely to be made using active modes.
- 6.3 The following specific active travel enhancements are under consideration in relation to the Lower Berse Farm Development:
- Provision of shared footways/cycleways along the A525 Ruthin Road and Bersham Road which tie into the proposed internal site network.
 - Signalised pedestrian crossing facilities at the proposed north-eastern access.
 - Footway provision and uncontrolled crossing facilities along the eastern side of Homestead Lane which links onto PROW13 which is intended to be retained/upgraded.
 - There is also potential to close Homestead Lane and Berse Lane to motorised traffic which would provide significant benefits for pedestrians, cyclists and horse riders, particularly given Homestead Lane routes alongside Ysgol Clywedog.
 - Additional uncontrolled crossings where appropriate.

Wider Measures for Wrexham

- 6.4 WCBC have undertaken consultation on active travel improvements for four routes as set out below. It is understood that these are currently in the design review phase.

- **A525 Kingsmills Road** (including links to the town centre) between its junctions with Kings Close and Bennion Road as well as onwards links towards the town centre via Bennion Road, Salisbury Road, Salop Road and St Giles Way.
- **A534 Holt Road and Borrass Road between the Cefn Road junction** (the Greyhound Inn) and the A5152 junction, as well as onwards links to the town centre via Holt Street and St Georges Crescent, we have also looked at Borrass Road
- **A5152 Chester Road**, with initial proposals looking at the section between its junctions with Glyndwr Road and Westminster Drive
- **A541 Mold Road and Regent Street** between the Plas Coch roundabout and the junction of Regent Street and Hope Street, including the A541 Mold Road, A5152 Regent Street, A5152 Bradley Road and A541 Central Road.



Source: Wrexham
 Transforming Towns website
 [https://wrexhamtransformingtowns.commonplace.is/]

6.5 Three of the four corridors under investigation are located in northern and eastern Wrexham and, as such, are less directly relevant to the area under consideration in this Technical Report. Measures under investigation for the Mold Road corridor in western Wrexham include:

Option 1 - Medium Intervention Package: New single direction cycle track (2m width) on either side of the Mold Road Corridor, with separated footways (width ranging between 2 to 3m)

Option 2 - High Intervention Package: New two-way cycle track (4m width) along the northern side of the Mold Road Corridor with separated footway (width ranging between 2 to 3m)

- 6.6 **Annex B, Figure B1** shows how the specific proposals put forward in relation to the Lower Berse Farm Development will complement the wider active travel improvements proposed across Wrexham as part of the city's Local Development Plan.
- 6.7 The proposed network of shared footways/cycleways within the Lower Berse Farm Development will provide good accessibility to all areas and corridors to the north, south and east of the site. These will tie in with the proposed shared footways/cycleways along the A525 Ruthin Road and Bersham Road providing excellent connectivity to/from Wrexham centre.
- 6.8 There is a significant cluster of trip generators / attractors in western Wrexham to the north of the Lower Berse Farm development. These include Wrexham Hospital, Wrexham University, Wrexham Technology Park and the Wrexham Central and Wrexham General rail stations. The site-specific proposals, in conjunction with the wider short / medium term WCBC proposals, will provide a network of partly or fully segregated active travel routes to access these locations.

Modal Shift Potential - Cycling

- 6.9 The DfT Cycling Propensity tool described above in Chapter 3 has been utilized to assess the likely scale of cycling potential in the area surrounding the Lower Berse Farm Development.
- 6.10 **Figures 6.1 and 6.2** show the cycling potential for the Wrexham 011A LSOA (Lower Super Output Area) under two possible scenarios. The results indicate the potential for cycling to increase from the baseline level of 2% to 6% under the Government Target scenario and 24% under the "Go Dutch" scenario. It should be emphasised that the "Go Dutch" scenario represents a highly aspirational situation where there is a seamless cycle network coupled with social attitudes that fully embrace cycling. However, it does offer a vision of what could be possible in the long term.

Modal Shift Potential - Walking

- 6.11 The active travel enhancements proposed within the Lower Berse Farm Development site and in adjoining areas will undoubtedly enhance the walking environment both for residents of the development and those living and working in surrounding areas. The increased ease, comfort and convenience of walking would be expected to facilitate the substitution of private car trips by walk trips depending on the specific origin and destination pair.
- 6.12 The walking distance from the centre of the Lower Berse Farm Development site to Wrexham centre is more than 2km (~30 minutes' walk time). This is not a comfortable walking distance for regular trips for most people and therefore there is expected to be minimal diversion from private car to walk for such trips.

- 6.13 Research suggests that walk trips account for around 80% of all trips of 1.5km or less (~20 minutes' walk time). As mentioned earlier, there are a range of significant trip generators / attractors within this walk distance of the site. In addition to these potential places of employment, there is a wide range of schools, shops and other facilities. At a conservative estimate, 5% of the external trips generated by the development might comprise local walk trips as compared to a 'typical' car-led development.
- 6.14 Research also suggests that larger residential sites which provide a good range of educational, retail, community and leisure facilities on-site (such as the Lower Berse Farm Development) benefit from a degree of trip internalisation. That is, people make short trips within the development which do not impact on the external transport network. For sites of a similar scale to the Lower Berse Farm Development, estimates of internal trips usually fall within the range of 5-10%.
- 6.15 Any such internal trips within the Lower Berse Farm Development would be a maximum of 1km (~10-15 minutes' walk time). Based on the principles set out above in paragraph 6.13, it would be expected that the majority of these would be walk trips.

Figure 6.1: Cycling Potential under Government Target (Near Market) Scenario

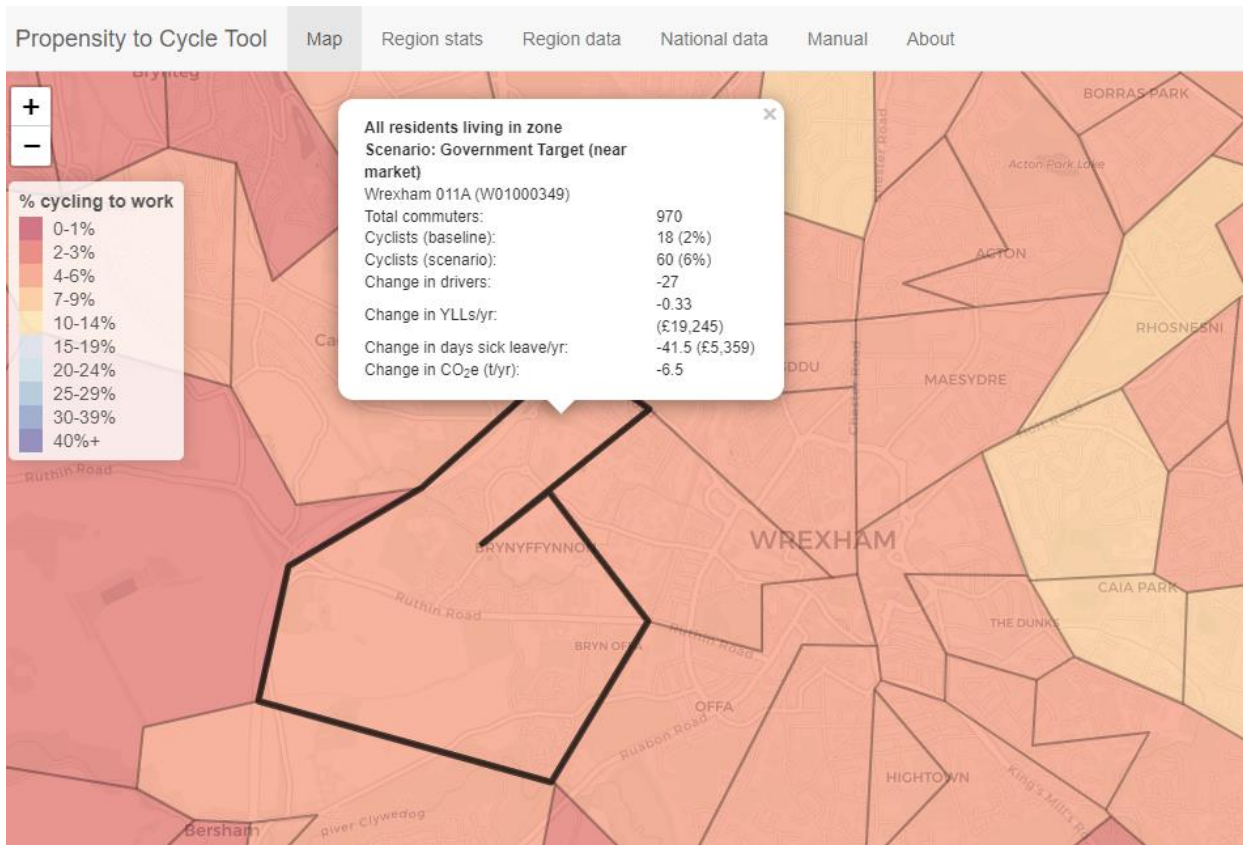
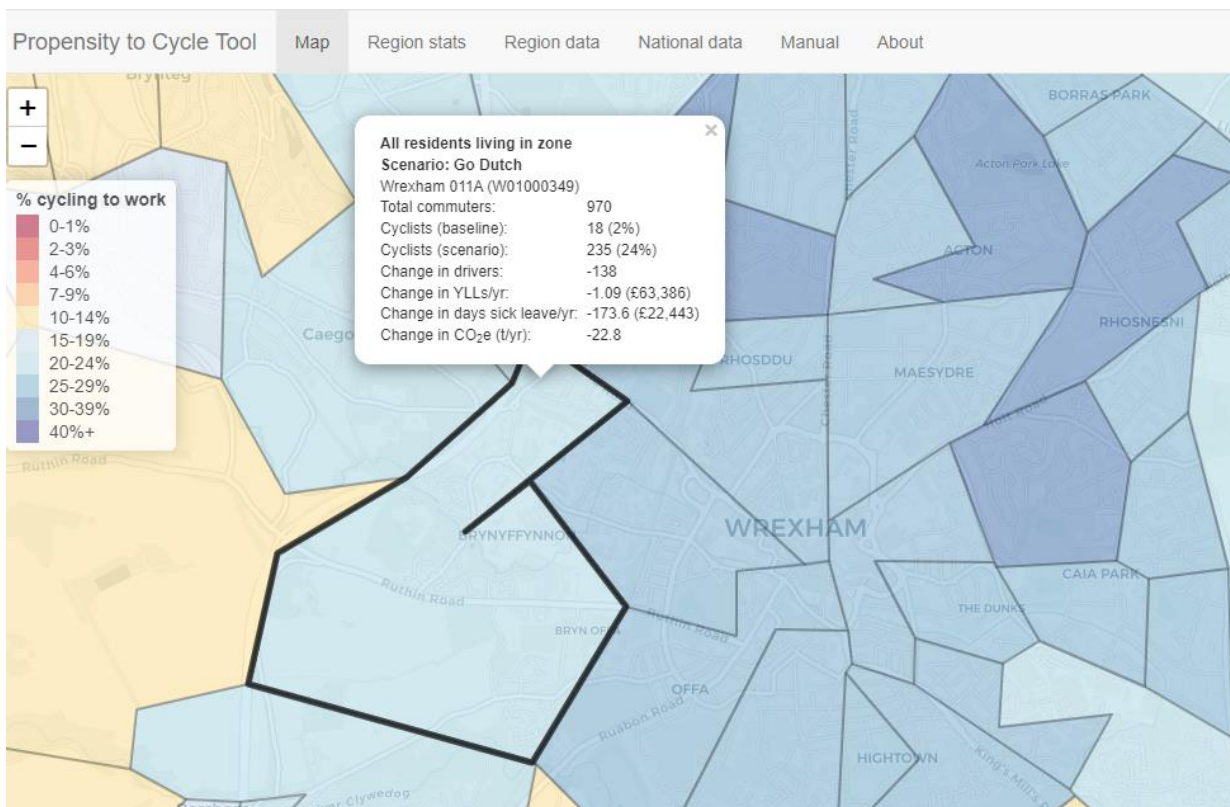


Figure 6.2: Cycling Potential under Go Dutch Scenario



7.0 PROPOSED SUSTAINABLE TRANSPORT MEASURES FOR LOWER BERSE FARM DEVELOPMENT

7.1 A comprehensive set of sustainable transport interventions are proposed to be implemented and funded as part of the Lower Berse Farm development.

Active Travel

7.2 **Table 7.1** summarizes the proposed active travel enhancements external to the site boundary. These will be funded by the development.

Table 7.1: Proposed External Active Travel Enhancements

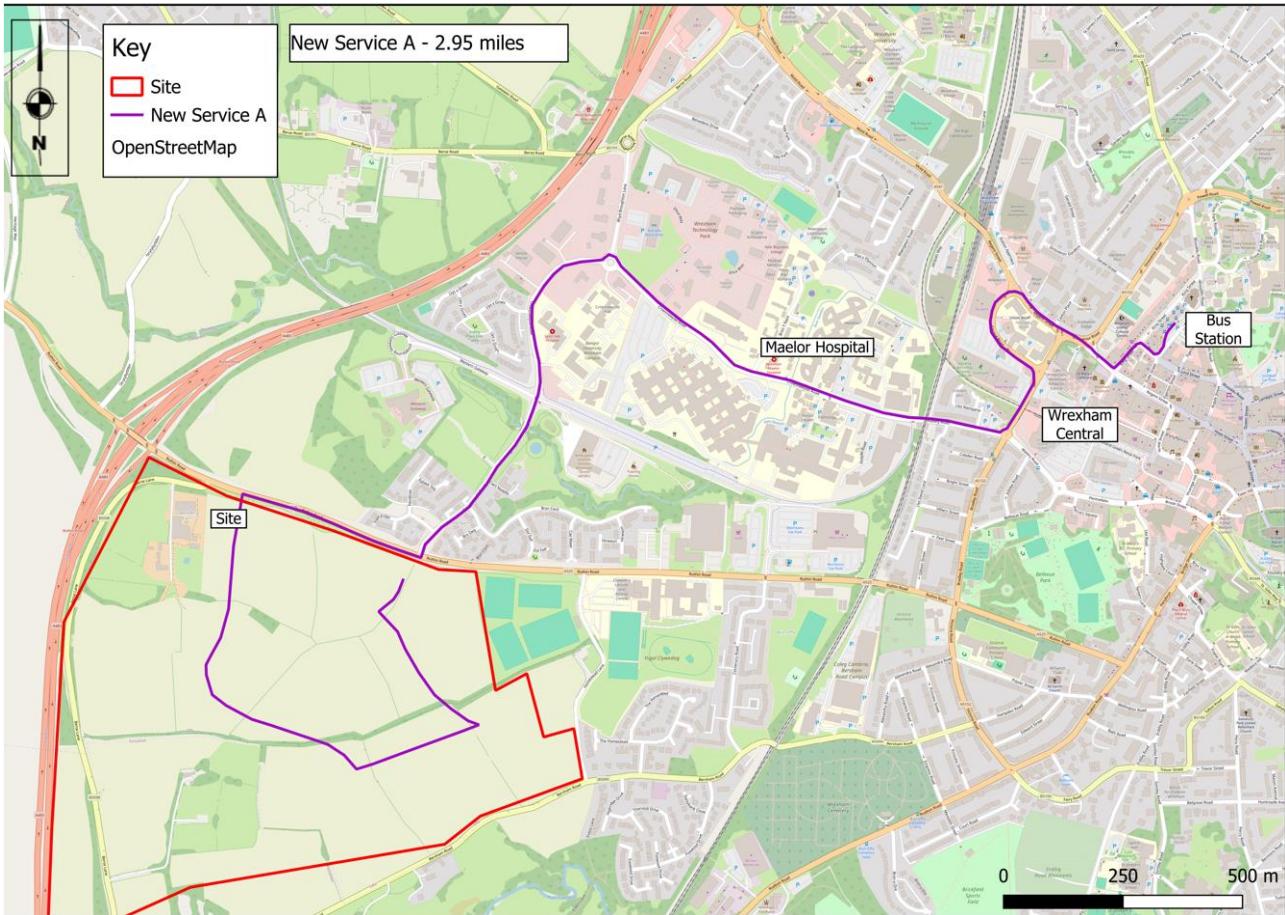
Corridor	Section	Proposed Active Travel Measure
A525 Ruthin Road	Section B5098 Between Berse Lane and Croesnewydd Road	Southern Side (along site frontage) 5.5m Segregated Cycle / Footway comprising: - 3.0m 2-way cycle track - 2.0m footway - 0.5m separation verge Northern side - 3.0m Shared Cycle / Footway
	Section Between Croesnewydd Road and Homestead Lane	Southern side - 3.0m Shared Cycle / Footway
	Section Between Homestead Lane and Centenary Road	Southern side - 2.0m Footway
B5099 Bersham Road	Section Between Western Site Boundary and Homestead Lane	Northern Side (along site frontage) 5.5m Segregated Cycle / Footway comprising: - 3.0m 2-way cycle track - 2.0m footway - 0.5m separation verge
B5098 Berse Lane	Section Between B5099 Bersham Road and PROW Byway	Eastern side - 3.0m Shared Cycle / Footway
Homestead Lane	Section Between A525 Ruthin Road and PROW	Eastern side (adjacent to school frontage) - 2.0m Footway

7.3 A comprehensive set of active travel measures are also proposed within the development site. Details of these can found in the Design and Access Statement.

Bus Services

7.4 **Table 7.2** summarizes the proposed bus service enhancements. These will be funded by the development.

Table 7.2: Proposed Bus Service Enhancements

Measure	Route	Indicative Operational Parameters
New Bus Service	One way loop within the development site, then connecting to Wrexham Bus Station via Maelor Hospital and Central Station (indicative route shown below)	Half hourly service, Monday to Saturday
	 The map displays the proposed bus route for 'New Service A' in Wrexham. The route is highlighted in purple and forms a one-way loop. It begins at a 'Site' (indicated by a red square in the lower-left area), travels east through Maelor Hospital and Wrexham Central, then south to the Bus Station, and finally returns to the Site. A key in the top-left corner identifies the 'Site' (red square) and 'New Service A' (purple line). A text box in the upper-middle part of the map states 'New Service A - 2.95 miles'. A north arrow is located in the top-left corner, and a scale bar (0 to 500m) is in the bottom-right corner. The map is sourced from OpenStreetMap.	

8.0 SUMMARY OF MODAL SHIFT POTENTIAL

Modal Shift Potential for Western Wrexham

- 8.1 **Table 8.1** shows conservative estimates of potential modal shift from private car to sustainable modes, based on the preferred sustainable transport interventions set out in the preceding Chapter 7.
- 8.2 The results are shown for the “Plausible” and “Possible” scenarios described earlier and also for the short and medium/long term. The results reflect the **combined** effect of the specific sustainable transport interventions at the Lower Berse Farm Development and enhancements of Wrexham’s public transport and active travel networks in the medium/long term, in line with the Welsh Government’s transport policies.
- 8.3 **Table 8.2** shows how existing commuting mode shares for the area of Western Wrexham would change over time based on the modal shift results set out in **Table 8.1**. The current dominance of private car trips would ameliorate over time, resulting in a more balanced and sustainable transport future.
- 8.4 The estimation of potential modal shift as a result of sustainable transport interventions is a relatively new area of work which has its limitations. However, there is a growing body of evidence of what can be achieved and this Technical Report demonstrates what may be possible in the case of the Lower Berse Farm Development to align with the Welsh Government’s transport policies.

Table 8.1: Estimated Relative Change in Mode Shares for Commuter Trips in Western Wrexham due to Sustainable Transport Interventions

Mode	Relative Change in Mode Share (%)	
	Short Term (2030)	Medium/Long Term (2040)
"Plausible Scenario"		
<i>Private Car</i>	-6%	-11%
<i>Bus</i>	+2%	+3%
<i>Cycle</i>	+2%	+4%
<i>Walk</i>	+2%	+4%
"Possible Scenario"		
<i>Private Car</i>	-11%	-28%
<i>Bus</i>	+3%	+8%
<i>Cycle</i>	+4%	+10%
<i>Walk</i>	+4%	+10%

Table 8.2: Existing and Estimated Future Mode Shares for Commuter Trips in Western Wrexham

Mode	Existing & Estimated Future Mode Shares (%)		
	Existing (2021)	Short Term (2030)	Medium/Long Term (2040)
"Plausible Scenario"			
<i>Private Car</i>	78%	72%	67%
<i>Bus</i>	3%	5%	6%
<i>Cycle</i>	2%	4%	6%
<i>Walk</i>	16%	18%	20%
<i>Others</i>	1%	1%	1%
"Possible Scenario"			
<i>Private Car</i>	78%	67%	50%
<i>Bus</i>	3%	6%	11%
<i>Cycle</i>	2%	6%	12%
<i>Others</i>	16%	20%	26%
<i>Walk</i>	1%	1%	1%

Notes:

1. For "Existing Situation" results are for Wrexham LSOA 011A
2. For "Future Situation" results are for Wrexham LSOA 011A including Lower Berse Farm Development

Sources:

England & Wales Census
DfT Propensity to Cycle Tool
SCP analysis and estimation

Feedback from Welsh Government

- 8.5 A meeting was with Welsh Government and WCBC to discuss the findings of the Draft Technical Report in May 2024. Following that meeting, the following feedback was received from Welsh Government:

"We are content to progress on the basis of the plausible scenarios for the relative change in modal shifts, however we believe these rates should not include the wider Wrexham proposals in case these are not completed by the LHA."

Modal Shift Potential for the Lower Berse Farm Development

- 8.6 The analysis was revised following Welsh Government feedback to solely focus upon the potential modal shift due to the specific sustainable improvements proposed in conjunction with the Lower Berse Farm development. **Table 8.3** shows the results estimated on this basis. **Table 8.4** shows the forecast resulting relative change in mode shares.

Table 8.3: Existing and Estimated Future Mode Shares for Commuter Trips from the Lower Berse Farm Development

Mode	Existing & Estimated Future Mode Shares (%)		
	Existing (2021)	Short Term (2030)	Medium/Long Term (2040)
"Plausible Scenario"			
Private Car	78%	71%	71%
Bus	3%	6%	6%
Cycle	2%	4%	4%
Walk	16%	18%	18%
Others	1%	1%	1%

Table 8.4: Estimated Relative Change in Mode Shares for Commuter Trips for Lower Berse Farm Development

Mode	Relative Change in Mode Share (%)
Private Car	-7%
Bus	+3%
Cycle	+2%
Walk	+2%

Assumptions

All of the modal shift occurs as soon as the measures are implemented

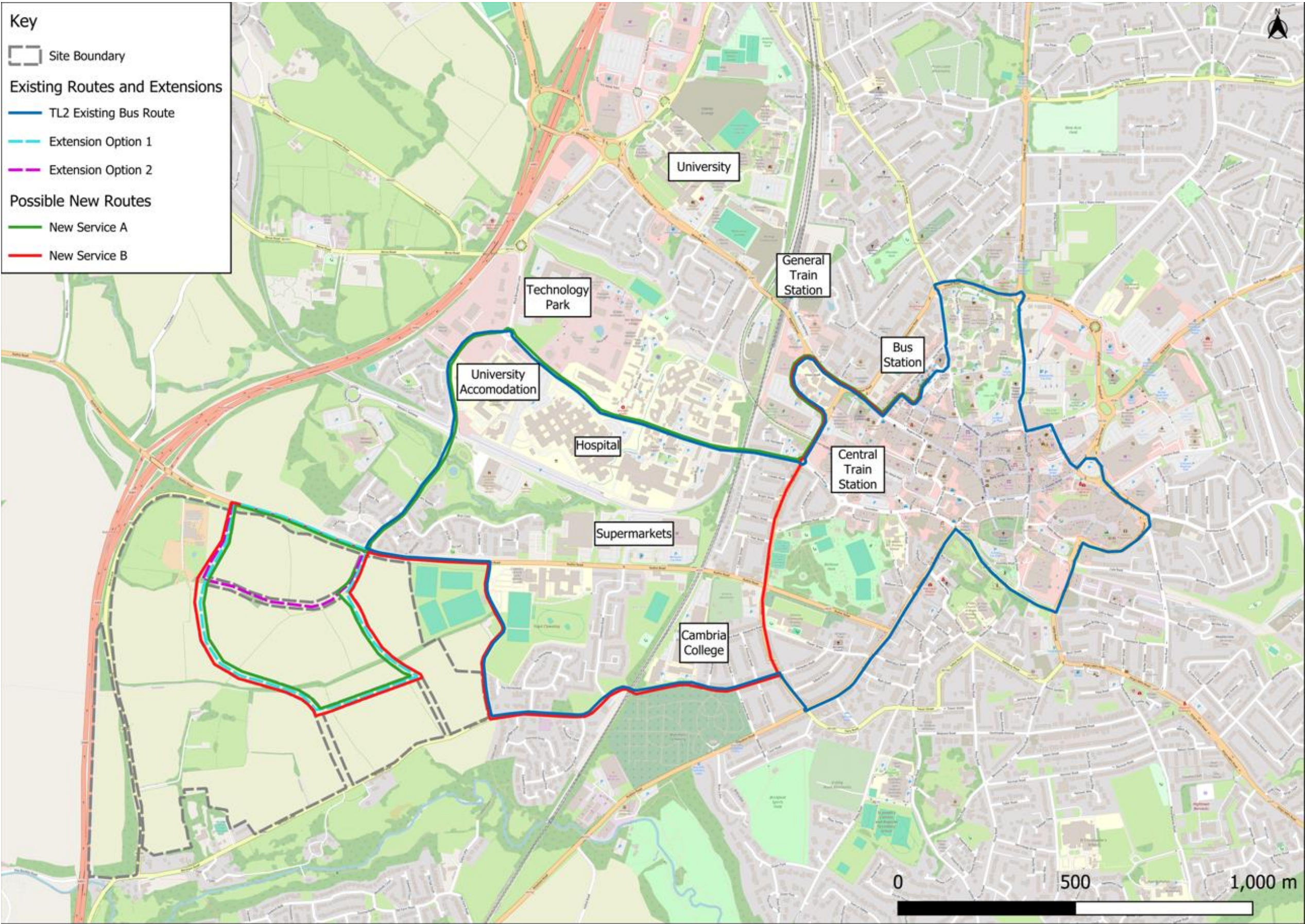
100% of increase in bus mode share is due to new service associated with Lower Berse Farm

50% of increase in cycle & walk mode share is due to active travel improvements associated with Lower Berse Farm

Remaining 50% increase in cycle & walk mode share is due to wider active travel improvements in Wrexham
Since there is no certainty around these, they have been excluded from the above table

- 8.7 The forecast change in person trip mode shares has been used to derive a set of vehicle trip generation rates for the development. This process is reported in the *Transport Assessment* report.
- 8.8 The preceding chapters have set out a comprehensive set of sustainable transport measures to be funded and implemented by the Lower Berse Farm development and the likely modal shift to sustainable modes as a result. These measures are fully aligned with the WG and WCBC policies encouraging sustainable travel.

ANNEX A: Figure A1 – Possible Bus Network Enhancement Options in Western Wrexham



ANNEX B: Figure B1 – Proposed Active Travel Network in Western Wrexham

