Rother District Local Plan Shared Transport Evidence Base (STEB):
Interim Assessment and Mitigation Strategy (Transport Note 001)

Prepared for
ESCC & RDC

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East Sussex Highways
A partnership between:
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Document Issue

Revision History

Issue	Author	Date	Description
1	S Jones	01/03/2022	Working Draft for Comment
2	S Jones	13/05/2022	Updated Draft for Comment
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Acronyms and Abbreviations

ASL	Advanced Stop Line
BRT	Bus Rapid Transit
BSIP	Bus Service Improvement Plan
B2C	Business-to consumer
C2X	Consumer-to-all-parties
CIHT	Chartered Institution of Highways & Transportation
CIL	Community Infrastructure Levy
CREATE	Congestion Reduction in Europe: Advancing Transport Efficiency
DaSA	Development and Site Allocations Local Plan (Adopted)
DDRT	Digitally Demand Responsive Transport
DfT	Department for Transport
DoS	Degree of Saturation
EA	Environment Agency
EAST	Early Assessment & Sifting Tool
EBC	Eastbourne Borough Council
ESCC	East Sussex County Council
ESCWTM	East Sussex Countywide Transport Model / "Countywide Model"
ESH	East Sussex Highways
EV	Electric Vehicle
GPS	Global Positioning Satellite
HBC	Hastings Borough Council
HELAA	Housing and Economic Land Availability Assessment
HIF	Housing Infrastructure Fund
HS1	High Speed 1
IDP	Infrastructure Delivery Plan
JTW	Journey to Work
LCWIP	Local Cycling and Walking Infrastructure Plans
LGF	Local Growth Fund
LGV	Light Goods Vehicle
LP	Local Plan
LPA	Local Planning Authority
LSOA	Lower Super Output Area
LSTF	Local Sustainable Travel Fund
LTA	Local Transport Authority
LTP	Local Transport Plan
MEH	Major Economic Hub

MRN	Major Road Network
MSOA	Middle Layer Super Output Area
NBDA	North Bexhill Development Area
NCN	National Cycle Network
NH	National Highways / Formerly HE - Highways England
NPPF	National Planning Policy Framework
NPS	National Policy Statement
NTS	National Transport Statistics
PCT	Propensity to Cycle Tool
PPG	Planning Policy Guidance
PRC	Practical Reserve Capacity
PT	Public Transport
QBP / QBC	Quality Bus Partnership / Quality Bus Corridor
RDC	Rother District Council
RIS	Road Investment Strategy
RTPI	Royal Town Planning Institute
SELEP	South East Local Enterprise Partnership
SEP	Strategic Economic Plan
SIP	Strategic Investment Plan
SOBC	Strategic Outline Business Case
SRN	Strategic Road Network
STEB	Shared Transport Evidence Base
STA	Sustainable Transport Audit
STT	Sustainable Travel Town
SVD	Select Vehicle Detection
TC	Town Centre
TEMPro	Trip End Model Presentation Program
TN	Transport Note
TfSE	Transport for the South East
TfWM	Transport for West Midlands
TRICS	Trip Rate Information Computer System
UCL	University College London
VOC	Volume Over Capacity
WDC	Wealden District Council
ZED	Zero Energy Development

Executive Summary

Purpose of this Transport Note

Rother District Council (RDC) is preparing a new Local Plan as a framework for future development up to 2039. The Council is undertaking evidence gathering and further engagement to help inform and shape the draft Local Plan before Regulation 18 consultation, planned for early 2023.

The likely transport impacts of future growth will be one of the key considerations of the acceptability of the Local Plan and the Council has undertaken an early assessment of the likely impacts of a potential growth distribution, based on sites promoted through a 'Call for Sites' consultation, on the transport network and potential need for mitigation. This work is being undertaken in collaboration and continued engagement with key transport stakeholders, including East Sussex County Council (ESCC) and National Highways (NH).

The assessment makes use of an interim high-level spreadsheet-based modelling tool, as an initial step, and in advance of using the recently developed East Sussex Countywide Transport Model (ESCWTM / "countywide model"). The countywide model will be used in subsequent stages to underpin and develop a detailed Shared Transport Evidence Base (STEB) to assess the transport impacts of the emerging growth distribution in Rother and from other Local Plans in the county. This Transport Note (TN-001) sets out the outcomes of this early analysis of a potential Rother growth distribution and provides initial sensitivity testing of the cumulative cross-boundary growth across the county.

Local Plan context

Any Local Plan is expected to mitigate the severe impacts of new development on the transport system, however, the wider policy agenda looks beyond this expectation and identifies the need to deliver a decarbonised, sustainable transport system and healthy, inclusive and high-quality places. The Council has pledged to become carbon neutral by 2030 and has set out the following draft Local Plan priorities:

Housing Need	Seeking to meet overall housing (including affordable and specialist) need and provision of strategic infrastructure to support the delivery of development
Sustainable Economic Growth	Securing economic improvement and regeneration with better access to jobs and services
Climate Change and Environmental Protection	Respond to the current elevated environmental and Climate Change focus by delivering a Local Plan which delivers the targets and ambitions of the Council's Environment Strategy
Tourism and Quality of Life	Planning for an ageing population and better facilities for sports, leisure and culture
Historic Character and Inclusivity for All	Beautiful well-designed areas, maintaining safe places to live and supporting strong, sustainable communities

The high level of car ownership and car travel, coupled with an ageing population, gaps in sustainable transport infrastructure and poor connectivity with rural areas, are key challenges within the district and wider functional geography. The current transport scheme pipeline, being developed by ESCC, RDC and NH, seeks to address some of these issues through existing strategies, but funding is a key constraint and more will

need to be done to support their delivery, as well as, any more substantive measures, such as those set out in the Transport for the South East (TfSE) Draft Strategic Investment Plan (SIP), needed to mitigate the impacts of Local Plan growth.

The plan-making process provides an opportunity to plan for people and places, through a decarbonised and sustainable transport system, rather than rely on planning for unconstrained traffic growth. At this stage, an initial potential growth distribution has been assessed, relying on the sites submitted through a 'Call for Sites' consultation, which could deliver around 7,000 houses. Further option testing is needed going forward to test different levels and distributions of development before identifying a preferred option.

Transport impacts of Initial Growth Distribution

The potential growth distribution has been assessed, alongside existing and future baseline scenarios, using the interim STEB spreadsheet-based modelling tool to understand the current and likely future impact on the highway network in the weekday AM and PM peak hours.

The level of growth assessed could generate close to 4,000 additional development related vehicle trips on the network in the weekday AM and PM peak hours. Over 50% of this traffic is likely to be generated by potential development in the Bexhill area, which is likely to accommodate a higher level of growth in the future with the remainder distributed in the towns of Rye, Battle and wider rural areas.

Recognising that further detailed assessment of potential options will be undertaken in the countywide model, the traffic impact of the potential growth distribution has been assessed against the capacity of the district road network to provide an indication of where impacts, without mitigation, are likely to be severe and cause additional congestion and delay to journeys. The analysis indicates:

- The network is generally operating within capacity at peak times with some localised congestion and delays at key junctions, particularly on the A259 in Bexhill, which is approaching capacity and most likely to be at risk of increased congestion and delays in the future
- The traffic generated by this potential growth distribution would have the greatest impact on the A259, particularly through Bexhill where capacity would be exceeded, and on the A21 to a lesser extent
- A number of local junctions located on the A259 and A21 routes and on other routes, including the A269, A2690 and A269, could be constrained by future traffic growth and lead to additional congestion 'hotspots' on the network
- While the network as a whole could generally accommodate the level of future development growth tested, mitigation is likely to be needed to improve sustainable travel options and also at specific locations along key corridors, particularly on the constrained A259 in and around Bexhill
- Without mitigation, the level of impact of the potential growth distribution tested is likely to be high on the links approaching 100% and on the A259 in particular. Elsewhere, at a link level at least, the impacts are less severe, however, this would need further consideration at a junction capacity level, which could constrain capacity on the network and lead to additional congestion and delay.

Cumulative impacts of neighbouring Local Plan growth

The STEB spreadsheet-based modelling tool has also been used to understand the potential cross-boundary impact of the emerging spatial picture in neighbouring authorities in the county. Each district, with the exception of Hastings, is still at an early stage of option testing prior to consulting on a preferred option. The strategies are likely to change going forward and the assessment is an early sensitivity test only to understand the possible impacts of cross boundary growth.

The current level of projected growth could deliver an additional 35,000 houses and 360,000 sqm of retail / employment uses in the other districts. Neighbouring Wealden could potentially deliver the highest level of growth and is currently assessing options with up to 16,000 houses and 170,000 sqm of floorspace.

The additional traffic impact of this growth could add a further 8%-13% traffic growth, over and above the Rother option, to the district network. The additional growth is likely to further impact on the potential capacity issues identified on the A259, A21, A269 and A2690 corridors and key junctions, which could require additional mitigation.

Acknowledging the fluidity of all Local Plans across the county, and neighbouring counties, further agreement will be needed on how cross boundary growth is treated, within any future countywide modelling assessment, and the scale of impact expected to be specifically mitigated by a new Rother Local Plan. Similarly, the cross-boundary impacts of any growth in Rother from neighbouring authorities needs to be considered in the same context.

Planning for sustainable transport and future mobility

The modelling indicates that the potential growth distribution tested, and cross boundary growth, could have some severe impacts on the district road network, which is likely to need mitigation. The preferred approach is to plan for people and places and consider the role sustainable and future mobility options could play prior to defaulting to traditional highway capacity solutions. An initial framework strategy has been included in this study, which considers wider evidence within the district context, assesses early mitigation options, the potential for mode shift and reducing car use.

Transport for the South East (TfSE) has published its' draft Strategic Investment Plan (SIP) and set out a 'Sustainable Route to Growth' in their transport and future mobility strategies, which targets the need for £45bn of capital investment in transport infrastructure across the region and a 9% reduction in forecast car use, by:

- Making active travel the first choice for short journeys
- Enhanced partnerships and improvements to interurban and rural public transport services
- Placing zero emission bus rapid transit (BRT) at the centre of the transport system
- Planning for and adapting to technology 'place-based bundles', reducing car dependency and ownership

Elsewhere, the DfT's Sustainable Travel Town (STT) research indicates similar levels of reduction in car use could be achieved through investment in 'smart choice' programmes over a sustained period. Rother, with varied geographies, has the potential to achieve similar levels of car use reduction in Bexhill and on some key corridors along the coast towards Hastings and Eastbourne. The rural areas and smaller towns in the central and northern areas of the district present a number of challenges and a lower reduction in forecast car use is more likely, depending on the

measures deployed. The eventual strategy will need to integrate a range of mobility solutions with the principles of placemaking and the transport needs of residents to deliver the desired outcomes, including:

Accessibility	development to plan for '15-minute' neighbourhoods with easy access to key services, public transport and active travel networks
Behaviour change	reduce the need to travel and level of car ownership in accessible town centre locations and support the switch to electric vehicles
Active travel	move away from car dominated roads to create safe and connected corridors for pedestrians, cyclists and other micro-mobility options
Bus	develop enhanced partnerships, prioritised zero-emission mass bus rapid transit (BRT) and digital demand responsive transport (DDRT) solutions to serve more remote rural areas
Rail	continued improvement to level of service, introduction of High-Speed rail and better integration with bus, active and micro-mobility options
Future mobility	explore the concept of Mobility as a Service (MaaS), potential for shared mobility hubs and alternatives to traditional car ownership
Last-Mile delivery	innovative solutions to consolidate deliveries and reduce goods vehicles on network

At this stage, a framework package of mitigation measures has been identified, which would need to be delivered at intervals across the Local Plan period with varying levels of complexity based on cost, deliverability and technological advancement. This has allowed an early assumption for an average 5% (less accessible locations) to 10% (Bexhill and coastal urban corridors) reduction in forecast car use to be applied to the initial modelling outputs across the district network to identify potential residual issues requiring further consideration.

Further modelling will be needed in the countywide model with more detailed mode shift analysis of specific measures, journey-purposes and corridors to understand a more precise geographical distribution of modal shift on the network. Careful consideration will need to be given to how these measures can be funded and delivered within the context of a Local Plan Infrastructure Delivery Plan (IDP) and viability.

Planning for residual traffic impacts

The application of these initial headline mode shift targets could mitigate some of the impacts of potential growth on the network. The key exceptions are the A259 and A21 Strategic Road Network (SRN) corridors where sections of road are currently at or approaching capacity. Other junction 'hotspots' across the wider district local road network could also be further impacted by potential cross-boundary growth from neighbouring districts and would need consideration going forward.

An initial capacity review of the potential local junction 'hot spots' on the key corridors has been undertaken to advise on early concept improvements. Design recommendations have been combined with advice from previous studies and are subject to more detailed design feasibility and assessment in the countywide and local junction models. Generally, reasonable local junction improvements could be implemented at most locations to improve capacity and complement the potential sustainable transport options. Some key locations could still have some residual design or capacity issues towards the end of the plan period, which may need further consideration through further detailed modelling in the countywide model, including:

- Sections of the A259 corridor through the Bexhill area would be close to, and potentially exceed, capacity in peak times, particularly if the level of cross-boundary traffic growth is realised
- Previous studies have identified potential design challenges to improving the A259/B2182 Little Common Roundabout. Further consideration would be needed of potential signal solutions, number of arms and proximity of the war memorial
- The A259/A269 London Road signal junction requires more detailed assessment of potential developer mitigation from the former High School site development, need for further capacity and possible third-party land take
- Previous studies have identified potential challenges to implementing signals at the A269/A2036 Hollier's Hill junction including relocating a bus stop and access to an adjacent petrol station

The impacts of wider additional cross-boundary Local Plan growth on the Rother network will also need to be considered within the context of the eventual need for mitigation. Equally, the cross-boundary impacts of the Rother Local Plan will need to be considered too, particularly in neighbouring Wealden and Hastings.

Initial engagement with NH has highlighted that a longer term 'monitor and manage' approach could be adopted across the Local Plan period. This would only require the implementation of proposed mitigation if the prevailing future traffic conditions actually rose to the modelled forecast levels. NH have clarified that, while this is a preferred, pragmatic and proportionate approach, they would still expect to see any necessary mitigation identified with a basic level of design and feasibility as part of the Local Plan evidence to ensure there is a reasonable and deliverable solution if required in the future. This approach could be similarly adopted, in agreement with ESCC, for any mitigation on the local road network.

Summary and next steps

An initial assessment has been undertaken of a potential growth distribution for Rother with the key objectives to understand the likely high-level transport impacts, early mitigation solutions and any residual risks to the district transport network, in advance of developing a preferred growth option and in advance of the countywide model being available.

The assessment indicates that development growth could have significant impact on key corridors, including the A259 and A21 Strategic Road Network (SRN). An initial framework of sustainable, and progressively innovative, transport solutions has been promoted as a priority to explore the potential for modal shift and reduce forecast levels of car use. An average 5%-10% reduction in peak hour car trips has been tested as a reasonable ambition for the district over the plan period and identifies some residual impacts on the A259 corridor in particular, which will need further consideration in the countywide model and possible additional mitigation.

Further consideration will also need to be given to the cross-boundary impacts of Local Plan growth in neighbouring districts on the Rother network and, equally, the corresponding impacts of the Rother Local Plan growth on their networks.

As a next step the SATURN-based strategic East Sussex Countywide Transport Model (ESCWTM / "countywide model") will be used to refine the modelling methodology, assess impacts in more detail and further develop the transport evidence base as the Local Plan is prepared further.

1 Introduction

Rother District Council (RDC) is preparing a new Local Plan as a framework for future development up to 2039. The first stage Rother Local Plan Early Engagement public consultation concluded in Spring 2021 and the Council is undertaking evidence gathering and further engagement to help inform and shape the draft Local Plan before Regulation 18 consultation, planned for early 2023.

The need for investment in transport infrastructure to meet current demand and provide alternatives to car travel, particularly through reducing the need to travel and providing for sustainable modes, is widely recognised through national and local policy. The likely impacts of further growth will present additional transport challenges across the district and wider region, which will need assessment and appropriate mitigation as evidence of the acceptability and soundness of the Local Plan. Equally, the capacity of the existing transport network and the potential for it to change / expand will influence the quantum and location of additional growth that can be accommodated in the district, and will be one factor influencing the extent to which Rother is able to meet its objectively assessed needs, particularly for housing.

A SATURN based East Sussex Countywide Transport Model (ESCWTM / "countywide model") has recently been developed (available for use from April 2022) to test the emerging spatial picture in Rother and the neighbouring Local Planning Authorities (LPAs) in the county as part of a Shared Transport Evidence Base (STEB). The countywide model will eventually be used to refine a preferred option and provide an accepted basis for the transport evidence base to deliver housing and economic growth in the district.

From late 2021, and in advance of using the countywide model, there was an immediate requirement to understand the likely impacts of Local Plan options on the transport system and gain an early indication of the possible scale and type of mitigation needed. A high-level interim spreadsheet-based modelling tool was developed for each of the five East Sussex districts in the county as an initial step in the STEB process. The STEB 'spreadsheet model' has been used to assess the known Local Plan options at both an isolated district-level and also the emerging in-combination countywide level to identify potential constraints on the transport network, likely scale of mitigation needed and any residual impacts that could present risks to the delivery of each Local Plan.

This Transport Note (TN-001) sets out the outcomes of the early STEB analysis for Rother, and, acknowledging the wider spatial picture is at a similar early stage, provides further sensitivity testing of the possible additional cross-boundary impacts of emerging Local Plan options in each district in the county.

This phase of work delivers an overview of the existing transport and movement challenges facing the district geography, the assessment approach used and early mitigation advice. These outcomes will assist with developing the Local Plan options and guide more detailed testing of transport impacts and further mitigation planning in subsequent phases using the countywide model.

2 General Approach

2.1 Shared Transport Evidence Base

The impacts of new development will extend beyond the local area and across boundaries into neighbouring districts. LPAs and county councils have a duty to cooperate with each other, and with other prescribed bodies, on strategic matters. This includes delivering effective infrastructure to support and mitigate the significant impacts of new development.

The current emerging status of all Local Plans within the county provides an opportunity to assess each Local Plan on its respective merits and potential in-combination effects with its neighbouring areas. The outcome of the initial STEB assessment will enable the LPAs and ESCC to work collaboratively to consider high-level impacts and early scalable mitigation solutions countywide, which can evolve as the eventual preferred spatial strategies are finalised.

2.2 'Planning for People and Places'

The minimum expectation for any Local Plan is to mitigate the severe impacts of new development on the transport system, however, the wider policy agenda looks beyond this expectation and identifies the need to deliver a decarbonised, sustainable transport system and healthy, inclusive and high-quality places through the plan-making process. In September 2019, the Council declared a climate emergency and pledged to become carbon neutral by 2030. The Royal Town Planning Institute (RTPI)[1] has identified a framework (see Figure 2-1) to guide the role of spatial planning and achieve a decarbonised net-zero transport system.

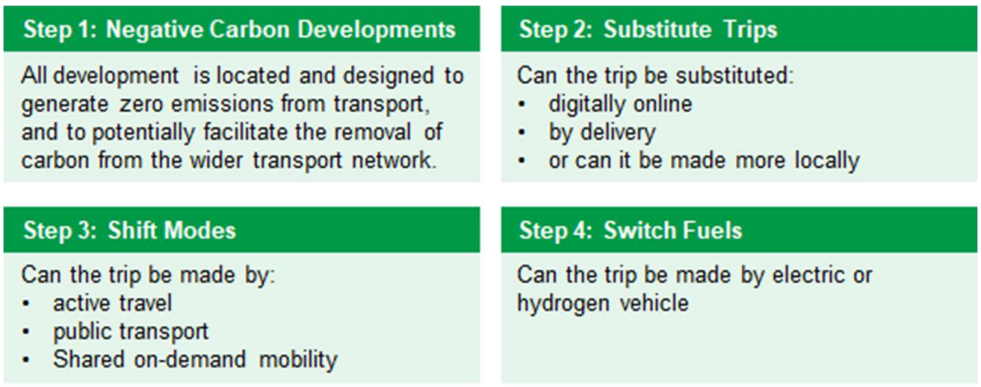


Figure 2-1 RTPI Sustainable Accessibility and Mobility Framework

This approach emphasises the need to move away from the traditional 'predict & provide' approach, where historic trends are used to forecast hypothetical futures to justify continual, and unsustainable provision of additional highway capacity, ultimately risking unconstrained levels of car-dependency. Wider industry guidance (TRICS[2] and CIHT[3]) is also pushing for a change, where a 'decide and provide' approach to actively

[1] Net Zero Transport: the role of spatial planning and place-based solutions (RTPI 2021)

[2] Better planning, Better transport, Better places (CIHT 2019)

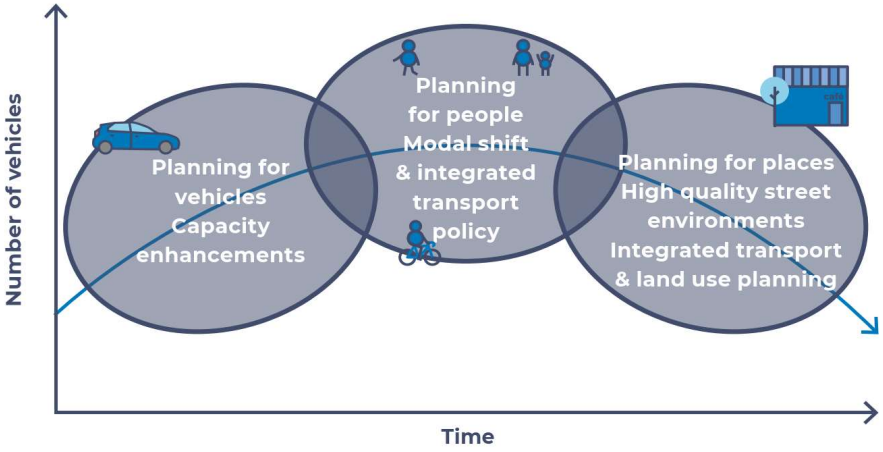
[3] Guidance Note on The Practical Implementation of The Decide & Provide Approach (TRICS 2021)

choose preferred transport outcomes, is advocated. Transport for the South East (TfSE) applies this in their strategy to deliver sustainable growth and transport solutions up to 2050[4] in the South East region. This TfSE approach provides a relevant blueprint to cascade down to the county and district level to start planning a preferred outcome for the new Rother Local Plan.

TfSE has initially adopted a traditional forecast demand modelling approach to understand how and where the transport network is likely to be constrained. However, rather than immediately applying car-based capacity solutions, the strategy advocates investment in public transport alternatives, integrated land use planning, demand management and embracing emerging technologies to solve problems in the future.

The approach follows three stages of evolution in transport planning policy perspectives (see Table 2-1), developed by Professor Peter Jones – UCL, to help guide transport and land use policy. The stages demonstrate how moving away from 'planning for vehicles' (predict and provide) to 'planning for people and places' (decide and provide) can reduce car use over time and deliver high quality places and environments for people to live.

Table 2-1 Evolution of Transport Planning policy (source: TfSE Transport Strategy for the South East)



Stage 1: Planning for Vehicles	TfSE recognise that the region is still largely in this first stage and, in the short term at least, targeted highway-based schemes will still be needed to address congestion 'hotspots' and also provide complementary measures for bus and active modes.
Stage 2: Planning for People	Focuses on the needs of different transport users, including pedestrians, cyclists, public transport passengers, people with reduced mobility, freight operators and car, van and powered two-wheeler drivers. Understanding these needs and encouraging modal shift to more sustainable transport modes could manage future demand and minimise adverse impacts on society and the environment.
Stage 3: Planning for Places	Promotes the integration of transport and land use that both encourage sustainable travel choices and also reduce the need and/or distance for travel.

The framework and initiatives for 'planning for people and places', by delivering well-planned, sustainable places for people to live and work, are already evident at a policy and physical level in the region. However, there is emphasis that more will need to be done, and at a faster rate, to put people and places at the heart of the transport system. The new Rother Local Plan presents an opportunity to proactively plan development

[4] Transport Strategy for the South East (TfSE 2019)

and transport in response to changing socio-economic, environmental and technological futures.

2.3 Application of Initial STEB Approach

The approach (shown in Figure 2-2) adopted in this phase of work generally follows the TfSE principles at a local level and provides an early assessment of traffic growth and potential risks to key parts of the transport system. A 'decide and provide' future is the priority and the primary focus will be on sustainable transport opportunities across the network and at key developments to start 'planning for people and places'. This will look at wider evidence and examples with similar geographies to Rother to start developing different future scenarios and, depending on the packages of interventions, the varying potential for modal shift.

The approach recognises that an element of 'planning for vehicles' is still likely to be needed, in the short term at least, to address residual impacts on the highway network and to enable sustainable transport and more active travel options to come forward. Key challenges and opportunities for all transport users will be identified to inform further detailed testing of mitigation in the countywide model.

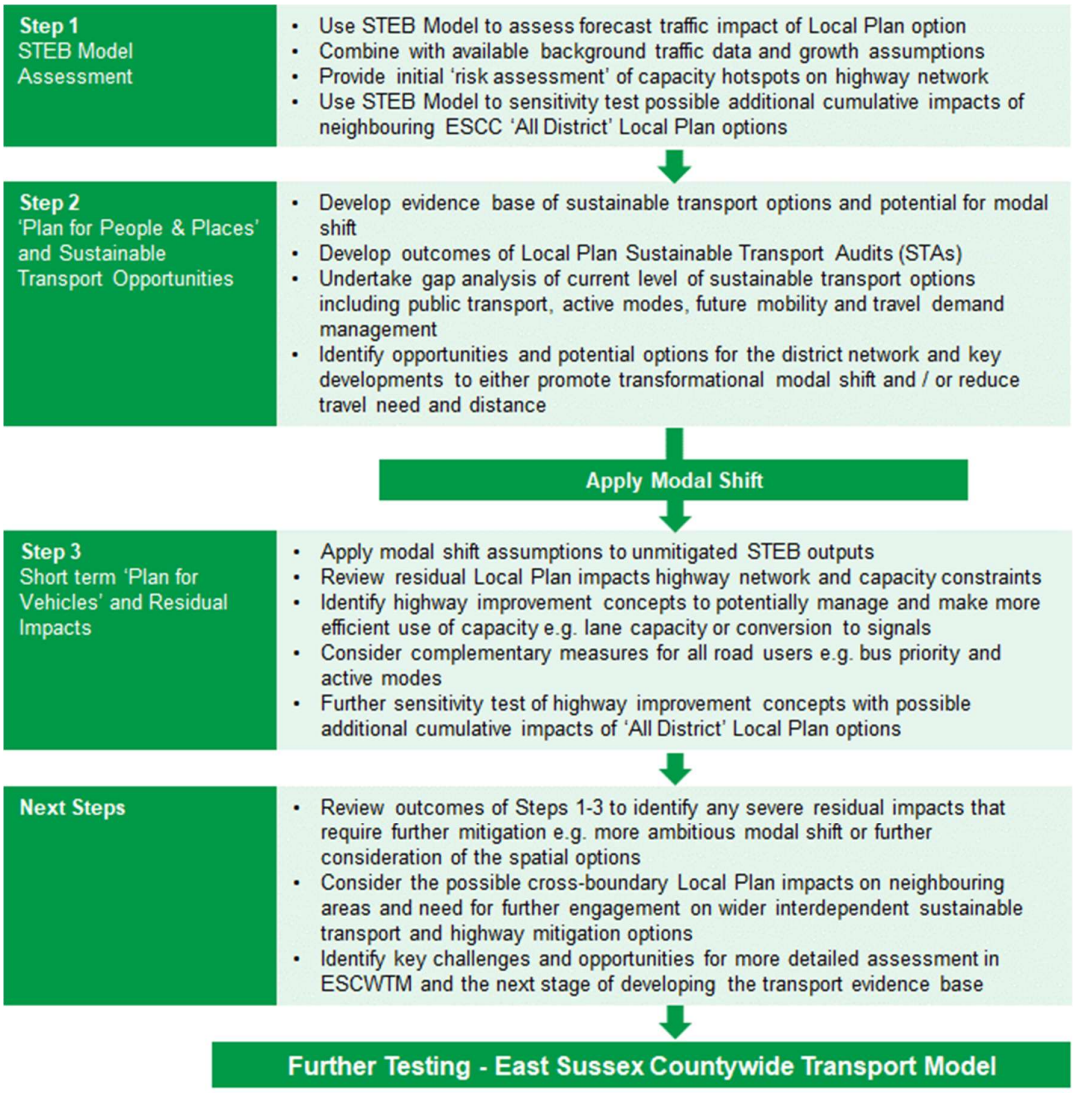


Figure 2-2 Overview of initial STEB approach

3 Rother Context

3.1 New Rother Local Plan 2019-2039

The new Rother Local Plan will plan and manage growth, regeneration and development in the district up to 2039. A Housing and Economic Land Availability Assessment (HELAA) is being prepared and targeted consultation has already taken place through a 'Call for Sites' engagement process. The Council is initially testing a potential growth distribution, consisting largely of sites submitted through the 'Call for Sites' consultation, which provides an early indication of the scale and distribution of around 7,000 houses (see Figure 3-1). This distribution includes around 2,000 dwellings on the edge of West Bexhill, 1,000 dwellings on the edge of North Bexhill and 600 dwellings within the existing urban area. The remaining 3,400 dwellings are distributed across the other towns and villages in Rother.

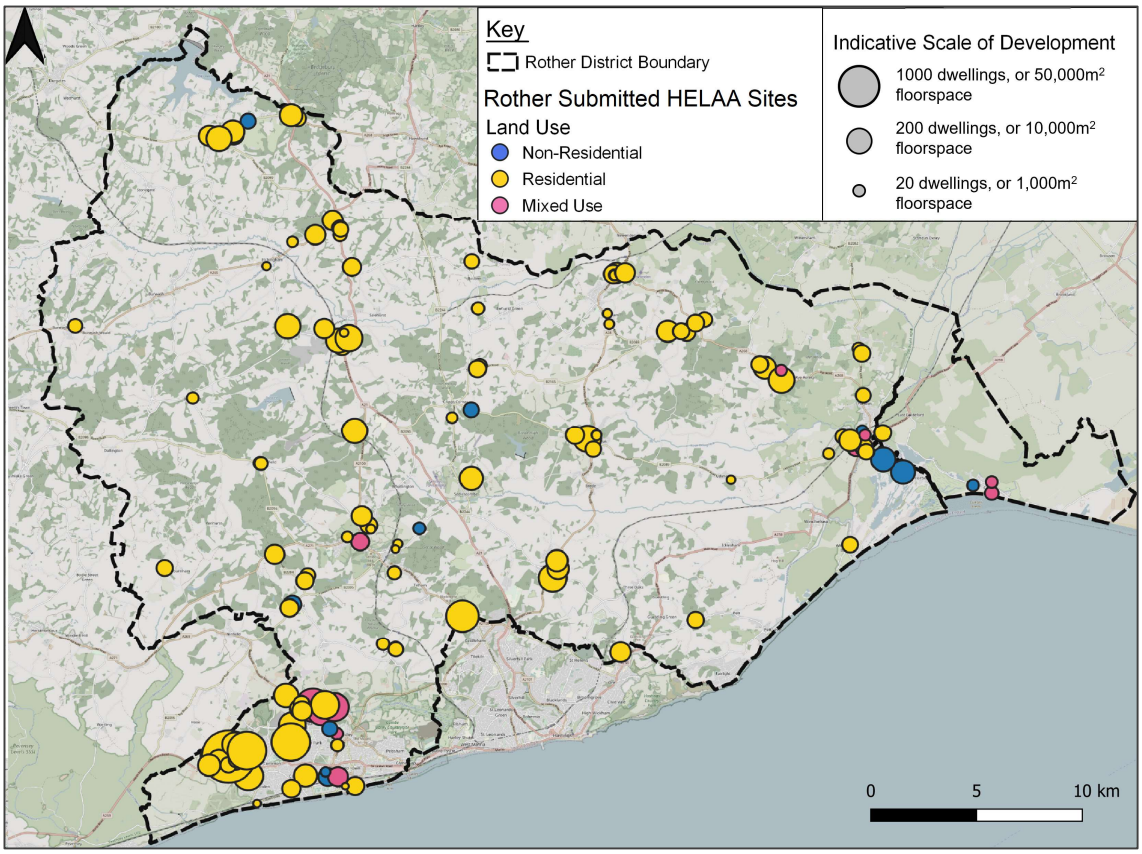


Figure 3-1 Rother HELAA sites (excluding Windfall and Commitments)

3.2 Vision and Objectives

In 2019 RDC declared a 'Climate Emergency' in the district and pledged to become carbon neutral by 2030. The Council's Local Plan Early Engagement Document (2021)[5] and adopted Environment Strategy (2020)[6] set out a vision, key priorities and

[5] Rother Local Plan 2019-2039

[6] Environment Strategy 2020 – 2030

transport themes that the new Local Plan will need to respond to and support the delivery of a Climate Emergency Action Plan (see Table 3-1).

Table 3-1 Vision, Priorities & Key Transport Themes

Environment Strategy 2020-2030 Vision	
"The air will be cleaner as the need to travel will be reduced and those of us that do travel will travel by bike, public transport, electric vehicle, or on foot. The natural and built environment will be enhanced and protected for current and future communities. The Council will be a carbon neutral organisation; the district will be tackling and adapting to climate change. More energy will come from renewable or low-carbon sources… The district will be resilient to the impacts of climate change… Everyone will play their role in reducing their impact on the environment."	
New Local Plan Early Engagement Document Priorities	
• **Housing Need:** Seeking to meet overall housing (including affordable and specialist) need and provision of strategic infrastructure to support the delivery of development • **Sustainable Economic Growth:** Securing economic improvement and regeneration with better access to jobs and services • **Climate Change and Environmental Protection:** Respond to the current elevated environmental and Climate Change focus by delivering a Local Plan which delivers the targets and ambitions of the Council's Environment Strategy • **Tourism and Quality of Life:** Planning for an ageing population and better facilities for sports, leisure and culture • **Historic Character and Inclusivity for All:** Beautiful well-designed areas, maintaining safe places to live and supporting strong, sustainable communities	
Key Transport Themes	
• Focus development along key transport corridors • Deliver infrastructure improvements to bus, cycleways, road safety, footpath and A21/A259 • Encourage walking and cycling across the district and at new development • Sustainable transport and move towards net-zero carbon and electric vehicle use • Become a smart digital district to support changing working patterns and enable environmental improvements	• Explore options to make urban areas, such as Bexhill town centre, car free or restricted vehicular access • Reduce the need to own or use a car through managing developments in the Local Plan • Improve the standard, environmental impact and frequency of public transport as well as promoting its use • Develop electric vehicle (EV) Plan and roll out charging points across the district and to new homes and businesses

3.3 Wider Policy Context

The development of the Local Plan transport evidence base and the mitigation requirement will also need to respond to wider policy objectives and guidance. Table 3-2 summarises key national, regional and local transport policy guidance relevant to plan-making.

Table 3-2 Wider transport policy and guidance

National Policy
The National Planning Policy Framework (NPPF) (Department for Communities and Local Government, 2021)
The NPPF sets out the government's planning policies for England and requires all plans to promote a sustainable pattern of development and be genuinely plan-led. It advises that transport issues should be considered from the earliest stages of plan-making so that potential impacts on transport networks can be addressed; so that opportunities for existing or proposed transport infrastructure, including charging technology and usage are realised, so that opportunities to promote walking, cycling and public transport and identified and pursued; so that the environmental impacts are identified, assessed and taken into account; and so that patters of movement, streets, parking and other transport considerations are integral to the design of schemes and contribute to making high

quality places. It advises that significant growth should be focused on locations which are or can be made accessible, through limiting the need to travel and offering a genuine choice of transport modes.

It requires planning policies to be prepared with the active involvement of local highways authorities, other transport infrastructure providers and operators and neighbouring councils, so that strategies and investments for supporting sustainable transport and development patterns are aligned. The STEB assessment provides an initial assessment to understand the scale of likely impacts on the network.

National Planning Policy Guidance (NPPF) (Department for Communities and Local Government, 2021)

The PPG provides further plan-making guidance on preparing a transport evidence base, including recommending assessment at initial evidence stage, options testing and as preparation of the final submission.

DfT Circular 20/2013: The Strategic Road Network and the Delivery of Sustainable Development (2013) & The strategic road network Planning for the future - A guide to working with Highways England on planning matters (2015)

National Highways (NH) has been, and will continue to be, engaged throughout the development of the emerging Local Plan evidence base. Circular 02/2013 sets out that through the Local Planning process developments should be promoted in sustainable locations and that capacity enhancements and infrastructure required to deliver strategic growth should be identified at the Local Plan stage.

Bus Back Better: National bus strategy for England (DfT, 2021)

The strategy provides a long-term commitment to funding and delivering more frequent, reliable and easier to use bus services to significantly increase passenger numbers and reduce congestion, carbon and pollution. The vision is for fully integrated and inclusive services, multi-modal ticketing, increased bus priority, reliable real-time information and turn-up-and-go frequencies. Funding is recognised as a key challenge, and the strategy provides support to Local Transport Authorities (LTAs) to access franchising powers. It also places an expectation on LTAs to commit to establishing, more flexible, Enhanced Partnerships across their entire areas and publish a Bus Service Improvement Plan (BSIP) to access continued central funding and support. The Local Plan will need to reflect the BSIP and integrate new housing and employment with enhanced public transport services and infrastructure delivery.

Gear Change: A bold vision for cycling and walking (DfT, 2020)

The Government has set out a vision for a step-change in cycling and walking, to double uptake over the next decade, and transform their role in the transport system where “Places will be truly walkable… Cycling and walking will be the natural first choice for many journeys with half of all journeys in towns and cities being cycled or walked by 2030.” Cycling and walking needs to be placed at the heart of the decision-making and Local Plan-making process to deliver healthier, greener and safer environments with convenient access to travel.

Regional Policy

Transport for the South East (TfSE) Transport Strategies (2020-22)

The TfSE transport strategy aims to support their vision for a net-zero carbon South East by 2050. The strategy sets out the different priorities underpinning the strategy for the environment and economy. Key themes of the strategy include promoting active travel and healthier lifestyles; reducing the impact of, and the need to travel; an affordable, accessible transport network; and a digitally smart transport network.

In Rother, the strategy acknowledges that sustainable initiatives and benefits of new technology should be shared between urban and more rural areas but that roads serving urban areas offer opportunities to look at the balance of road space between cars, public transport and active modes. One of the key challenges is identified as being the few long-distance orbital rail services in the South East England which is partly due to gaps in electrification of these corridors (e.g Marshlink Line between Hastings and Ashford, which passes through Rother).

TfSE Draft Strategic Investment Plan (SIP, 2022)

TfSE consulted on their draft SIP in mid-2022 and are currently preparing a revised draft in response to the consultation and input from local authorities across the region, government, Network Rail, National Highways and other key stakeholders. The draft SIP builds on the transport strategies, discussed above, and a wider evidence base to provide an emerging framework for investment in strategic multi-modal transport infrastructure, services and regulatory interventions up to 2050. The plan is seen as an enabler of future economic growth across different sectors and is intended to

present a compelling case for government and private investors that a £45bn capital investment over 27 years (£1.5bn per year) could deliver the following by 2050 across four regional packages:

- 21,000 additional new jobs
- additional £4bn GVA per annum
- 1.4 mega tonnes reduction in equivalent CO_2 emitted
- 500,000 more rail trips each weekday
- 4 million fewer car trips each weekday
- 1.5 million more trips by bus, mass transit and ferry each weekday

Rother is covered principally by the Kent, Medway and East Sussex package of interventions with a capital investment of £19.4bn needed up to 2050. TfSE recognises that funding the SIP will be the principal financial challenge and, at this stage, schemes have been prioritised into short, medium and longer term delivery timescales with high level advice around the expected next steps to develop the business case and feasibility with key delivery partners.

South East Local Enterprise Partnership's (SELEP) Strategic Economic Plan (2014)

SELEP has identified the potential to provide investment opportunities on or close to the A21 for commercial, leisure and housing land uses. Rye Harbour has been identified as having an existing strong manufacturing base with potential to expand, and the plan identifies opportunities for strategic housing and commercial development north east of Bexhill, subject to investment in the Queensway Gateway Road and a number of improvements to junction capacity on the North Bexhill Access Road. These proposals will be considered within the context of this study.

Local Policy

ESCC Local Transport Plan 3 (LTP3) (2011-2026)

The East Sussex LTP3 sets out the county's vision and objectives and the strategy from 2011 to 2026. The LTP3 sets out ten transport specific objectives including congestion reduction, connectivity improvement, increasing the uptake of sustainable and active modes, reducing greenhouse gas emissions and air and noise pollution from transport. Bexhill is identified within LTP3 as a priority area to facilitate housing growth and to create sustainable communities; the LTP3 also contains transport plans for Battle, Rye and rural Rother. An updated LTP4 is due to start preparation in 2022 and will provide a fresh set of objectives and outcomes for the transport context in the county

East Sussex Bus Service Improvement Plan (BSIP) (ESCC, 2021)

In line with the expectations of the Bus Back Better: National bus strategy for England, ESCC have prepared a BSIP. A key target of the BSIP is to initially reverse the decline in bus patronage and then grow it significantly in future years. This will be delivered by quality improvements, including bus priority schemes to improve reliability and punctuality, simplified and reduced fares and improved services in rural areas.

East Sussex's Local Cycling & Walking Infrastructure Plan: Let's get cycling and walking (ESCC, 2021)

The LCWIP sets out a proposed network of cycling and walking routes and measures in specific areas of the County. Importantly this will sit alongside the County Council's wider plans to improve mobility and transport over the next ten years and to deliver healthier, safer and more accessible new housing and employment through Local Plans. The LCWIP places people at its centre and focuses on understanding their needs and the places they want to get to by delivering an ambitious network of additional cycling and walking routes and measures to integrate with existing cycling and walking infrastructure.

Rother Corporate Plan 2020-2027 (RDC, 2021)

The Corporate Plan provides the strategic direction for the Council. It includes Priority Objectives and specific actions around themes including the Climate Emergency, increasing housing delivery and the supply of affordable homes throughout the District, and development of the local economy to lift the average indexed wage.

Rother Environment Strategy 2020-2030 (RDC, 2020)

RDC declared a Climate Emergency in 2019 with the target of being carbon, and other noxious gas, neutral by 2030. The Strategy sets out the Council's vision to reduce the impact on the environment and meeting this target through priorities around technology, energy, transport, construction and environmental impact. These have informed three policy themes to deliver Clean Growth, Healthy Places and Sustainable Services. The vision, priorities and themes set out in this document will inform the key recommendations and potential measures put forward in the STEB process

3.4 Area Profile

3.4.1 Local Geography

Rother is a largely rural district in the east of the county and borders the borough of Hastings to the south, the district of Wealden to the west and the county of Kent to the north (see Figure 3-2 for context and journey to work patterns with neighbouring areas). Rother has a population of 96,716 (2020)[7] and the main towns are Bexhill, Rye and Battle accounting for approximately 60% of the population. On average, Rother has an older estimated population age profile, with 32% over 65 years compared to 26% in the county, 20% in the south east and 19% nationally.

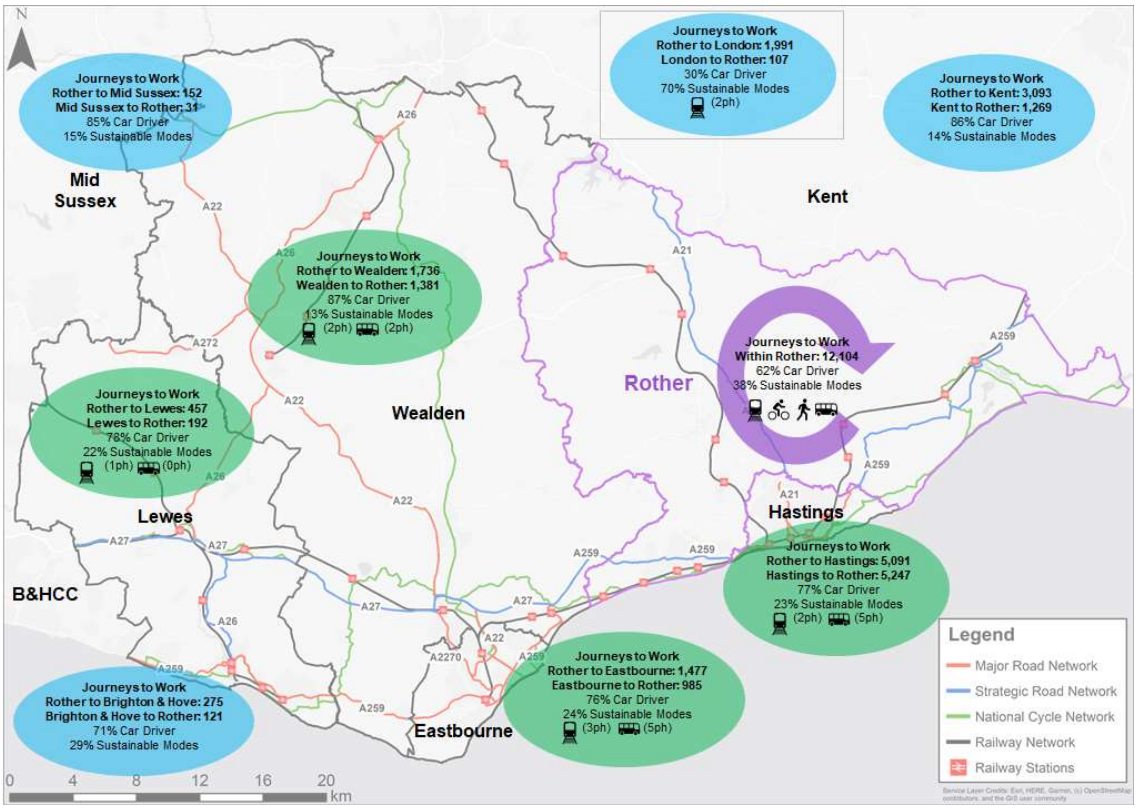


Figure 3-2 Rother context and journeys to work patterns with neighbouring areas (Census 2011)

The average private vehicle mode share for all journey to work trips to and from Rother is 69% (Census 2011). There are strong employment links with neighbouring Hastings, Wealden, Eastbourne and Kent, accounting for 40% of all journeys to work. Over 80% of these journeys are made by car, indicating a relatively high dependency on car travel for daily commuting.

There is a higher proportion (>20%) of journeys made by sustainable modes (public transport, cycling and walking) from Rother to Hastings, Eastbourne, Lewes and Brighton, than other districts, reflecting the cross-boundary rail links to these locations. Generally, the proportion of travel made by sustainable modes within Rother district is around 30% and lower than the neighbouring districts, where 38% of journeys are made by sustainable modes in Eastbourne, Hastings and Lewes. Most notably, public

7 East Sussex in Figures (accessed 05/2022)

transport (bus and rail) use for internal journeys within Rother is only 3% and lower than the corresponding journeys made within Eastbourne (9%), Lewes (8%), Hastings (10%) and across the county (12%). Only Wealden has a lower level of travel by sustainable modes (23%) than Rother in the county.

3.4.2 Transport Connectivity

Road

The A27/A259 corridor forms part of the Strategic Road Network (SRN) and is the main east-west road link along the coast connecting the district to the ports of Folkestone and Dover to the east and Newhaven to the west. The A21 also forms part of the SRN and provides the main north-south road link from Hastings to Tunbridge Wells and London. There are no sections of the Major Road Network (MRN) in the district. Several key junctions and roads on these corridors within Rother are either reaching, or at capacity, with congestion and delay during peak hours.

Bus

Stagecoach is the main bus operator in the district and an overview of key services connecting with neighbouring authorities, is summarised in Table 3-3. There are regular services between the coastal towns of Eastbourne, Bexhill, Hastings, Rye and Dover. Battle and the north of the district, with the exception of locations immediately located along the A21 and A28, are not well served by bus or rail and connectivity in many rural areas is limited. The level of service reduces further during the evenings and Sundays in most rural areas.

A number of other limited services operate infrequently to educational and community-based destinations in rural areas. There is also a volunteer-run charity service operating four community bus routes (11-14) in areas outside of Bexhill town centre. These each operate a loop with 3-4 services per day Monday-Saturday in different areas of the town not served by commercial operators.

Table 3-3 Key bus routes and frequency (Source: cartogold-ESCC – 03/2022)

Route Number	Destinations	Typical Hourly Frequency
29	Hastings – Northiam – Tenterden	6 services daily (Mon to Sat)
98/98A	Eastbourne - Hastings	2
99	Eastbourne - Hastings	3
100	Conquest Hospital – Rye	1
101	Conquest Hospital – Rye	1
102	Dover – Rye	1
304	Hastings – Battle	6 services daily (Mon to Sat)
305	Hawkhurst – Hastings	6 services daily (Mon to Sat)
312	Tenterden – Rye	7 services (Mon-Fri) 4 services (Sat)
313	Rye Harbour - Northiam	1
349	Hastings – Hawkhurst	5-6 services daily

Rail

The key direct rail services operating from key railway stations within Rother are shown in Table 3-4. Crowhurst, Battle, Robertsbridge, Etchingham and Stonegate stations are also situated on the main Hastings line to London (Waterloo, London Bridge, Charing Cross and Cannon Street), via Tonbridge. The East Coastway rail link between Brighton and Ashford, incorporating the Marshlink Line between Hastings and Ashford, links Bexhill with London Victoria, via Eastbourne, Lewes and Gatwick, and HS1 services to St Pancras. Rail travel time to London is approximately 2 hours from Bexhill, via the direct services, and 1hr 40mins via a change to HS1 at Ashford to St Pancras.

The rail journey times on east-west connections via the East Coastway, Hastings and Marshlink lines are generally comparable to peak hour car journey times, e.g.:

- Bexhill towards Brighton (55 mins), Eastbourne (30 mins) and Hastings (16 mins)
- Battle towards Tonbridge (55mins)

The Hastings line is electrified but has a limited power supply. There are regular 12 car services, however, the line is at its effective capacity and it is challenging to add more 12 car trains without significant investment in the power supply. Services and journey times to London and Kent along the south coast are considered slow and constrained by sections of singletrack and level-crossings on the Marshlink line through Rye towards Kent. The Marshlink line is only partially electrified and higher polluting diesel trains are required for a number of services.

Table 3-4 Key direct rail routes, journey times and frequency

Origin	Destination	Average Journey Time	Typical Hourly Frequency
Bexhill	Ore	14 mins	3
	Brighton	1hr	1
	Ashford International	55 mins	1
	Hastings	9 mins	4
	Eastbourne	21 mins	4
	Gatwick	1 hr 27 mins	1
	London Victoria	2hrs	1
Battle	London Charing Cross	1hr 29	2
	Tonbridge	45 min	2
	Hastings	17 mins	2
Rye	Eastbourne	56 mins	1
	Hastings	21 mins	1
	Ashford International	22 mins	1

Active Travel

Rother, and Bexhill in particular, has an older average population compared to other areas of the county, and accessibility to support this demographic is essential. The LCWIP (2020) identified the need for improvements to pedestrian infrastructure, e.g. enforcement to limit parking on existing footways, resurfacing of footways, increased

footway widths, increasing pedestrian crossing points and expansion of dropped kerb provision. This would help Rother in the regeneration of towns like Bexhill and the enhancement of the public realm. The LCWIP also focuses on the need to improve local access in smaller and more rural settlements, including Battle and Rye.

Rother includes National Cycle Network (NCN) Route 2 running east-west along the coast connecting Bexhill and Rye to Eastbourne in the west and Folkestone in the east. Within Rother, the route is mainly on-road and is only traffic-free at the border with Hastings.

Outside of the NCN, there are a number of cycle trails connecting Rye to Camber, Winchelsea Railway Station and Rye Harbour. Between Bexhill and Hastings there are intermittent sections of cycle trails or roads considered 'cycle friendly', which include traffic free sections along the promenades in both towns. There is also a greenway which runs parallel to the Combe Valley Way (Bexhill Hastings Link Rd) as well as along the North East Bexhill Gateway and North Bexhill Access Roads. Further to the north, existing cycle infrastructure and routes are relatively limited, in part due to the challenging topography of the district. The LCWIP places an emphasis on supporting access to local services and supporting wider projects that aid regeneration, growth in housing and employment and supporting the visitor economy.

Cycle parking is provided at key locations in the district including a cycle hub at Bexhill Railway Station (78 spaces), Etchingham (40 spaces), Battle (30 spaces) and Robertsbridge (20 spaces).

The East Sussex Pedal Power Scheme, eligible to anyone living within East Sussex, is operated by Active Cycling Projects Ltd on behalf of ESCC. There is a rental site in Bexhill and the scheme allows individuals to rent a bicycle or e-bike for a chosen length of time with the option to return the bike or buy it outright at the end of the loan period. This scheme aims to make cycling more accessible and targets employers and employees across all districts in East Sussex.

Electric Vehicle Infrastructure

In Rother, there are only 10 Electric Vehicle (EV) charging points registered on the Government DfT Zap Map site. The EV charging points are shown in Figure 3-3 with a combination of rapid, fast or slow charging located primarily in Bexhill and near to Flimwell and Ticehurst in the north.

There are currently no on-street points and most are located at workplaces (e.g. Battle Brewery), leisure destinations (e.g. Dale Hill Hotel & Golf) or retail locations (e.g. Aldi Bexhill) and are restricted to staff / visitors / customers only. An EV strategy will be needed to provide publicly accessible points, meet anticipated demand and also encourage uptake. ESCC are starting to prepare an EV strategy for the county and are engaging with the Council to address the specific requirements in the district and meet the demands of existing residents as well as supporting the delivery of new development through the Local Plan, including EV ready homes and on-street infrastructure.

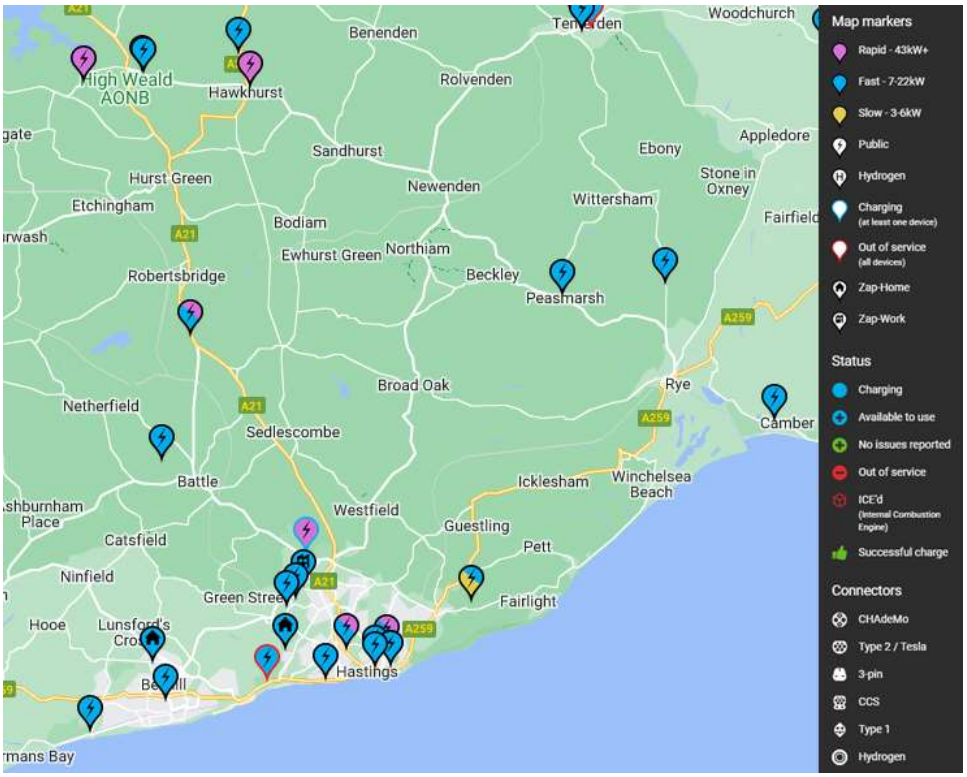


Figure 3-3 Current Rother EV charging locations (Source: DfT ZapMap – 05/2022)

3.5 Issues and Challenges

With varying levels of public transport, active and sustainable travel accessibility across the district, some of the key transport challenges in and around the district include:

- The Council has committed to being carbon neutral by 2030. In 2019, almost 45%[8] of carbon emissions in Rother come from road transport
- A high proportion (80%) of commuting with neighbouring Hastings, Wealden, Eastbourne and Kent is by car leading to congestion on the network
- Improvements to the bus infrastructure, journey time reliability and service frequencies to employment locations, rural areas and key services are needed to make bus a more attractive mode choice in the district
- Investment and improvements to existing rail services and journey times
- The topography and rural nature of much of the district makes accessibility and the uptake of active modes more challenging
- Lack of readily accessible EV charging infrastructure to meet existing and anticipated demand

[8] East Sussex in Figures (ESCC, 2019)

4 Transport Scheme Pipeline

4.1 Overview

In advance of identifying new mitigation options, there are a range of schemes and initiatives already in the pipeline across RDC and the wider area, which also need to be considered. Information is also provided at the end of this section of potential other schemes, which are either highlighted in the emerging draft TfSE SIP or being considered by RDC / ESCC in a parallel study. The following reports/studies have been used, alongside engagement with key stakeholders, to obtain the details of schemes that are already known about:

Rother District Council Core Strategy (RDC – 2014)
Bexhill – Highways Capacity Assessment Report (Peter Davidson Consultancy Ltd – 2018)
A259 Junction Analysis (Peter Davidson Consultancy Ltd – 2019)
Infrastructure Delivery Plan (RDC – 2019)
Bus Service Improvement Plan – Infrastructure Statement (ESCC – 2021)
Local Cycling and Walking Infrastructure Plans (LCWIP) (ESCC – 2021)
TfSE - South Central Radial & Outer Orbital Area Studies (TfSE – due 2022)
TfSE – Draft Strategic Infrastructure Plan (2022)

4.2 Longlist of Schemes

A long list of transport schemes has been identified with the Council and ESCC. These have been categorised by the 'level of certainty', mode of transport and body responsible for delivery in Table 4-1 and approximate locations shown in Figure 4-1. Appendix A includes a more detailed summary of each scheme.

Table 4-1 Rother District Council Pipeline Schemes and Status

Ref	Scheme name	Mode(s)	Delivery Lead
Committed (near certain / more than likely) – funding and permissions are largely secured either through developer S106 and / or public funding. It is either near certain or more than likely that the scheme will be delivered in current form to address known issues on the network and the impacts of growth in the currently adopted Local Plan i.e. **these schemes would be considered as part of the baseline and not necessarily to mitigate the impact of new Local Plan growth**.			
1	A259/A269 London Road junction signal re-timing	Car	NH / ESCC
2	A259 Little Common Road junction improvements	Car	NH / ESCC
3	Rolling programme of bus stop improvements across Bexhill	Bus	ESCC
4	Bus priority measures on Bexhill Road (located in HBC on RDC border)	Bus	ESCC
Planned (reasonably likely) – permissions and funding yet to be confirmed, but options and feasibility designs have been progressed and a funding route has either been partially secured, or is known, and/or a business case is being developed			
There are currently no planned schemes within Rother			
Concept (uncertain) – still at a hypothetical level of planning with a number of options still to be considered, further feasibility needed and funding route to be fully confirmed.			
5	A259/A2036 Glyne Gap roundabout capacity improvements	Car	NH / ESCC

Ref	Scheme name	Mode(s)	Delivery Lead
6	A269/A2036 (Holliers Hill) partial signalisation (some funding available from NE Bexhill permissions)	Car	ESCC
7	Hastings - Bexhill Rapid transit	Bus	ESCC/TFSE
8	Marshlink High speed services (Partial) – new London service	Rail	Network Rail
9	Marshlink High speed services (Full)	Rail	Network Rail

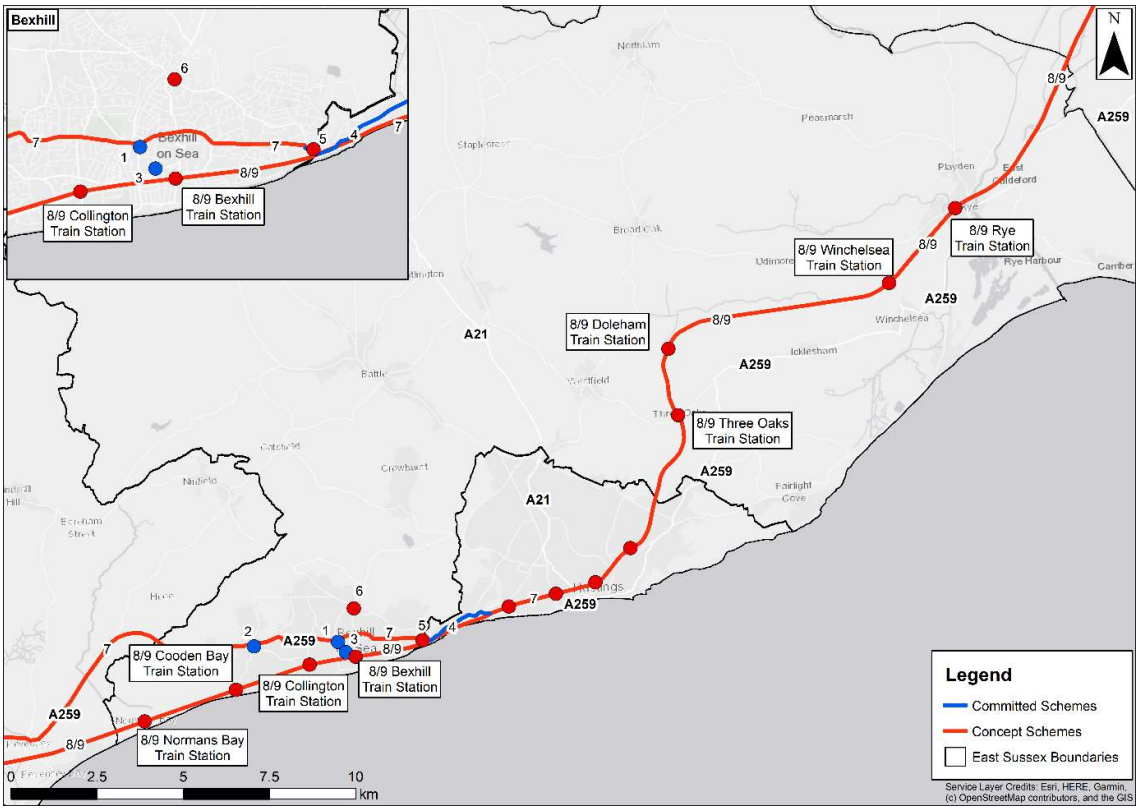


Figure 4-1 Rother Scheme Pipeline by status

4.3 LCWIP

The East Sussex Local Cycling & Walking Infrastructure Plan (LCWIP) sets out a plan for proposed cycling and walking networks and measures within specific areas of the county and received Member approval at the County Council's Cabinet meeting on 30th September 2021. It is focussed on areas where there are the greatest opportunities to increase levels of cycling and walking, with an emphasis on delivering infrastructure improvements which will support housing and those people who currently do not cycle or walk. The LCWIP walking and cycling proposals for the district are shown in Figure 4-2 to Figure 4-4 with further details of the schemes in Appendix B.

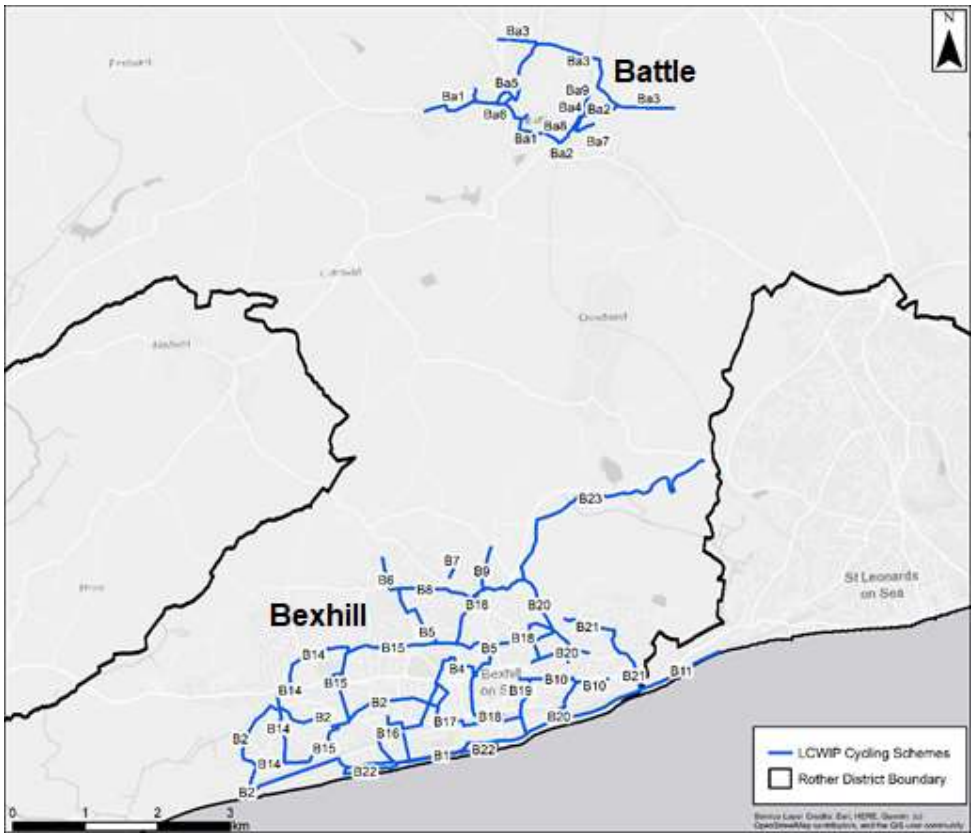


Figure 4-2 Bexhill and Battle areas LCWIP Cycling Schemes

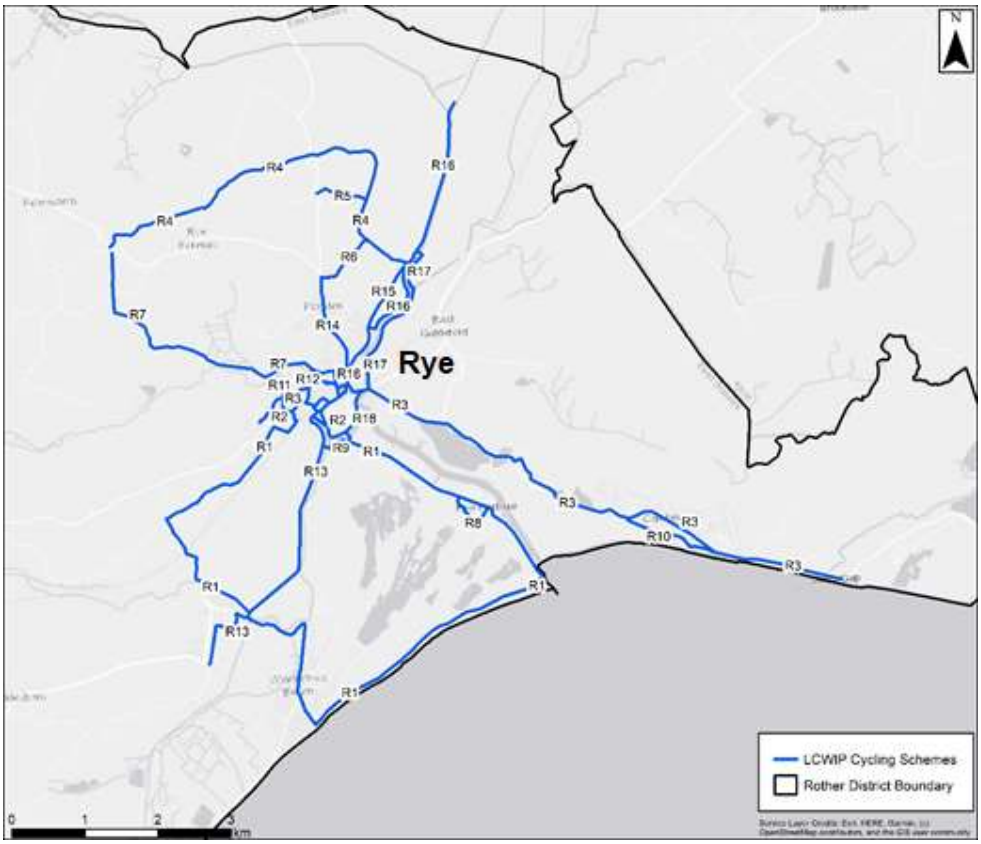


Figure 4-3 Rye area LCWIP Cycling Schemes

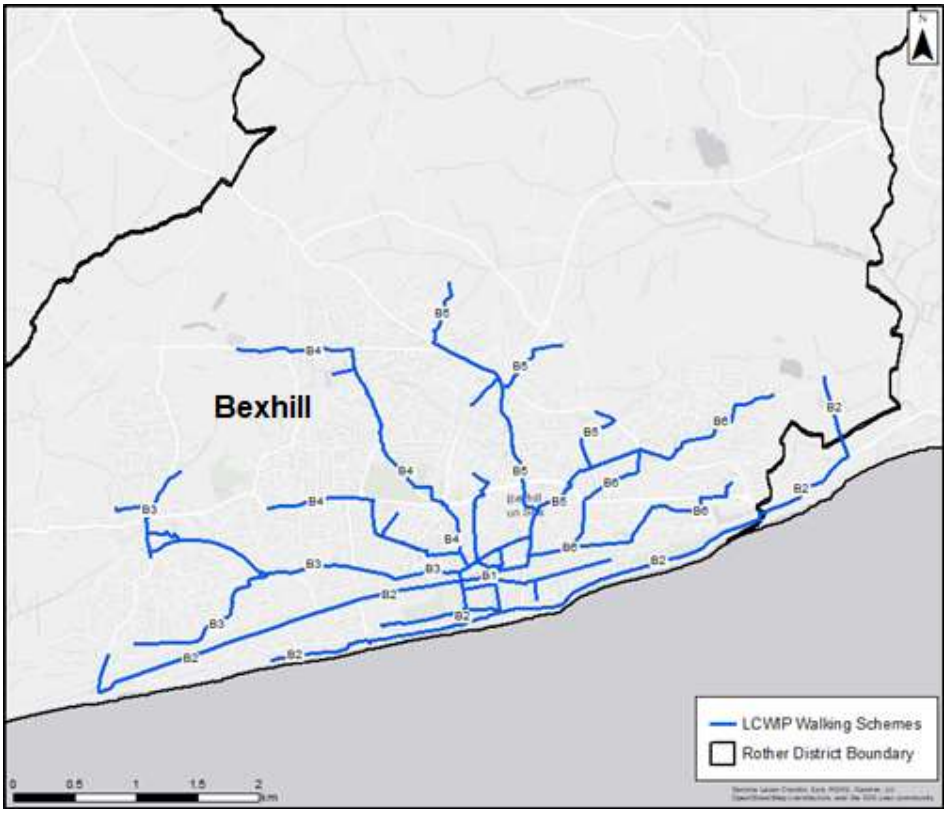


Figure 4-4 Bexhill area LCWIP Walking Schemes

4.4 Other Potential Schemes

4.4.1 TfSE Draft Strategic Investment Plan (SIP)

TfSE consulted on their draft SIP in mid-2022 and are currently preparing a revised draft in response to the consultation and input from local authorities across the region, government, Network Rail, National Highways and other key stakeholders. The draft SIP builds on a suite of TfSE transport strategies and a wider evidence base to provide an emerging framework for investment in strategic multi-modal transport infrastructure, services and regulatory interventions up to 2050.

Rother is covered principally by the proposed Kent, Medway and East Sussex package of interventions. This package identifies the need for a capital investment of £19.4bn up to 2050 and includes High Speed rail, mass transit, active mode and highway improvements. The potential schemes are at various levels of certainty, which overlap with the existing wider scheme pipeline, set out earlier in this section, and TfSE recognises that securing funding will be the principal financial challenge. Acknowledging that the draft SIP is subject to review, following the 2022 consultation, Figure 4-5 and Table 4-2 provide an illustrated summary of the locations and approximate funding timescales of the key schemes identified in the proposed Kent, Medway and East Sussex package of interventions in or on the border with Rother. Further engagement with TfSE and key partner bodies, including government and private investors, will be required to establish how these schemes will come forward within the Local Plan period.

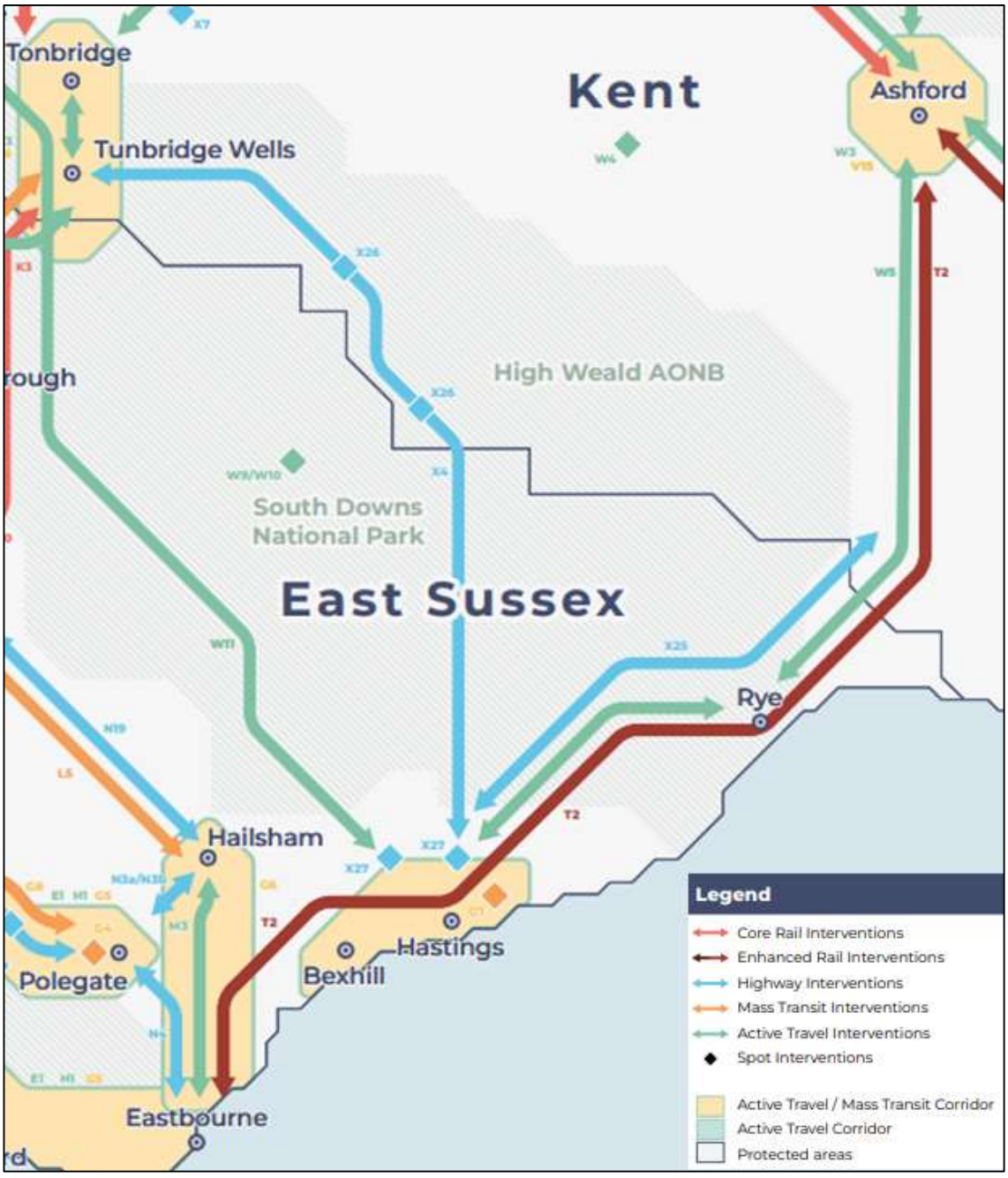


Figure 4-5 Map extract of TfSE draft SIP Kent, Medway and East Sussex package (TfSE, 2022[9])

9 TfSE (2022) – Draft Strategic Investment Plan

Table 4-2 Scheme summary TfSE draft SIP Kent, Medway and East Sussex package (TfSE, 2022[10])

Ref	Scheme name	Timescale	Status > Next Step(s)	Promoter
W5	Ashford - Hastings National Cycle Network Enhancements	Short	Pre-SOBC > Feasibility	ESCC / KCC
W9 / W10	East Sussex Local and Inter-Urban Cycleways	Short	Pre-SOBC > Feasibility	ESCC
W11	Royal Tunbridge Wells - Hastings National Cycle Network Enhancements	Short	Pre-SOBC > Feasibility	ESCC
G7	Hastings / Bexhill Mass Rapid Transit	Medium	Pre-SOBC > Feasibility	ESCC
T2	High Speed 1 / Marsh Link - Hastings, Bexhill and Eastbourne Upgrade	Medium	SOBC > OBC	Network Rail
X4	A21 Safety Enhancements	Short	Pre-SOBC > Feasibility	National Highways
X25	A259 Level Crossing Removals – east of Rye	Medium	Pre-SOBC > Feasibility	National Highways
X26	A21 Kippings Cross to Lamberhurst Dualling and Flimwell and Hurst Green Bypasses	Long	Pre-SOBC > Feasibility	National Highways
X27	Hastings and Bexhill Distributor Roads	Medium	Pre-SOBC > Feasibility	ESCC

4.4.2 West Bexhill Multi-Modal Corridor Study

RDC is undertaking a parallel study, separate to this STEB assessment, to consider an alternative distribution of higher Local Plan growth through an urban extension to the west of Bexhill-on-Sea. The study is being considered as a separate assessment at this stage to establish the associated problems and opportunities for transport intervention, as well as to review the requirement for, and the feasibility of, a multi-modal transport corridor connecting the A259 and A269 in West Bexhill to enable a zero-carbon transport vision for the area and support additional sustainable growth. The broad study area is shown in Figure 4-6.

The study is a phased exercise with stage gateway reviews, undertaken in line with the DfT Transport Analysis Guidance (TAG) and with RDC and ESCC Officers at strategic stages to validate and continue the study. The study is initially exploring the strategic context for the scheme and identifies the wider problems and opportunities an intervention would address. It also explores the early feasibility of potential routes, integration with sustainable transport networks and how the project could be funded.

10 TfSE (2022) – Draft Strategic Investment Plan Appendix A

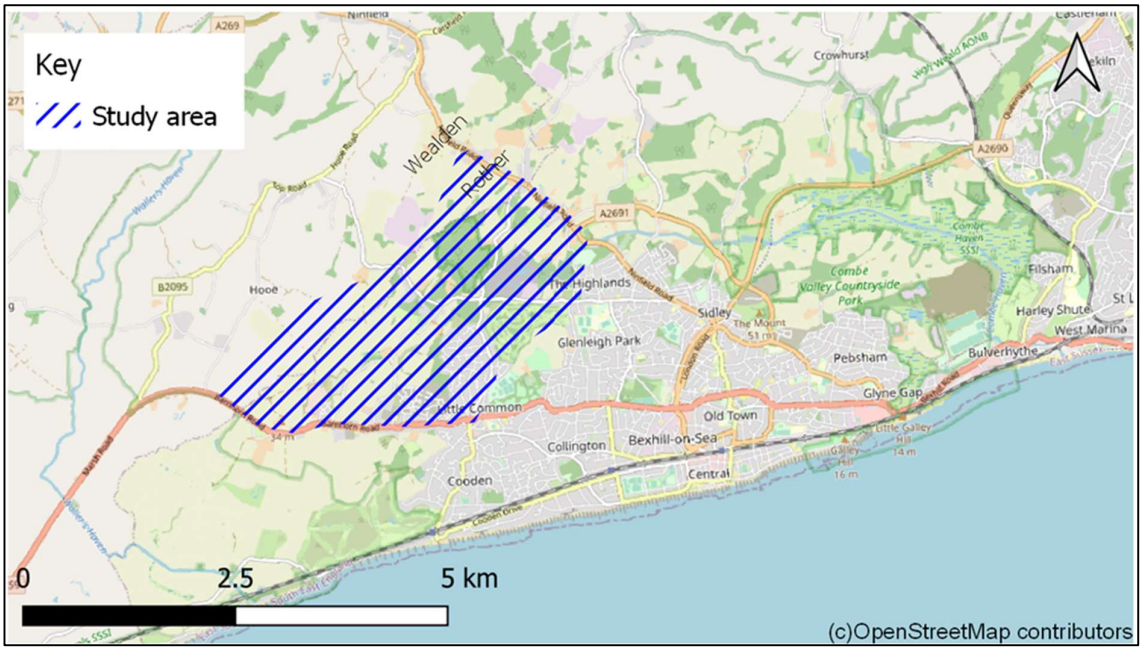


Figure 4-6 West Bexhill multi-modal corridor study area

The outcomes of the current stage of work are pending and will be combined with the outcomes of this STEB assessment to inform how RDC progress their Local Plan options, any associated transport interventions and assess them in the countywide model going forward.

5 Forecast Modelling

5.1 STEB Overview

The STEB highway assignment spreadsheet model (STEB Model) has been developed as one initial component of an overarching process to develop a common transport evidence base to support each of the emerging Local Plans across the county. This section gives a brief overview of the model structure and it is recommended that reference is made to the separate Phase 1 – Model Build Technical Note (East Sussex Highways April 2021) for more detail.

The ultimate objective is to develop a robust and appropriate evidence base for each Local Plan using the recently developed strategic countywide model going forward. The STEB Model is an interim spreadsheet modelling solution developed in the strategic transport modelling software 'Visum' to assign new Local Plan development only vehicle trips to the highway network. The outputs for each district are then combined to provide cumulative 'All District' Local Plan options to assess the full level of potential growth across the county. The development only flows are then combined with existing background traffic data (i.e. observed traffic data), where available, and TEMPro growth to provide future 'with Local Plan' traffic scenarios for the five districts separately ('Isolated Assessment') and in-combination with each other ('Cumulative Assessment'). Table 5-1 summarises the key modelling parameters applied.

Table 5-1 Key STEB modelling parameters

Base Year	Forecast Year	Time Periods	Trip Generation	Trip Distribution	Assignment
2019	2040 using TEMPro* AM: 1.183 / PM: 1.172	08:00-09:00 17:00-18:00	TRICS v7.8.3	2011 Census Journey to Work (JTW)	Visum based single route choice assignment based on road hierarchy.

** 2040 was agreed as a common forecast year to account for the varying horizon years of each Local Plan. TEMPro growth factors have been adjusted to account for committed development only as a Reference Case for comparing and adding Local Plan growth.*

5.2 Limitations and Assumptions

The STEB model is only intended to be an interim solution to support the Local Plan Regulation 18 consultation and has a number of limitations with functionality and assumptions made on how outputs should be interpreted. A summary of these limitations and assumptions are included at Appendix C and generally focus on trip purpose, network detail and the lack of a dynamic reassignment function to less congested routes in the STEB model.

Notwithstanding these limitations, the model provides an acceptable tool to gain an early understanding of the potential stress to the highway network and where mitigation solutions are most likely needed to inform the Local Plan Regulation 18 process.

5.3 STEB Inputs

5.3.1 Background Traffic Growth

The STEB model is a development only highway assignment model and does not explicitly model background traffic and growth. Recent 2019 turning count and link count data has been extracted, where available, for junctions and links to establish a baseline. A 2040 TEMPro growth factor (see Table 5-1) for Rother, with planning assumptions adjusted to account for committed development with planning permission only (2733 dwellings / 6045 jobs), has then been applied to establish a future year Reference Case to compare the 'with' and 'without' Local Plan potential growth distribution. The Reference Case is a theoretical baseline for benchmarking the impacts of the new Local Plan growth.

It is acknowledged that this level of growth is a conservative forecast and could realistically be higher with additional and unplanned development coming forward in the absence of an adopted Local Plan. The Reference Case will need to be reviewed as the STEB process evolves to agree an appropriate level of growth for inclusion in the baseline.

5.3.2 Local Plan Traffic Growth

The traffic growth for this potential growth option has been calculated by applying initial trip rates from the TRICS database for different land uses. A location map of the spatial distribution is shown in Figure 3-1, in section 3, and a summary of the trip rates applied to the different growth distribution land uses is included in Appendix D. All trip rates have been provisionally agreed with ESCC and NH for the purposes of this assessment and are subject to further review and refinement as part of any subsequent option testing in the countywide model.

The development only total vehicle trip generation by land use is summarised in Table 5-2 and shows that between 3,700 and 4,000 additional peak hour vehicle trips could be added by the Local Plan growth to the network. Residential development will account for 80-90% of this traffic with commercial development having a much lower impact.

Table 5-2 Development only trip generation by land use and potential growth distribution (Total Vehicles)

Potential Growth Distribution	Total Vehicle Trips
AM Trips	**3,704**
PM Trips	**3,962**

The trip rates are considered robust and unmitigated at this stage, i.e. with no modal shift, to present a 'worse case' for initial stress testing of the network and identifying potential constraints on link and junction capacity. Further consideration and refinement to specific land use trip characteristics will be needed as more development detail comes forward and the countywide model is used.

5.3.3 Development Trip Distribution and Assignment

2011 Census journey to work (JTW) trip information, using a middle layer super output areas (MSOA) zoning system, was used for the distribution of development trips. An appropriate MSOA zone was identified for each Local Plan development site to generate development only trip distribution matrices. In the absence of detailed access information for all sites, each development zone is allocated up to three zone connectors, using development access information where possible, to best reflect likely loading points on to the network. Specific locations of Windfall development are not known and up to five zone connectors have been allocated to distribute traffic at a local network level.

The Visum component of STEB is then used to assign development vehicle trips on to the network using the 'most likely' route choice based exclusively on link length and free-flow design speed by specific road type. It should be noted that the assignment process does not reflect full dynamic reassignment, in response to modelled congestion, generalised cost and driver behaviour.

5.4 Isolated Rother Local Plan Outputs

5.4.1 Forecast Flows

Figure 5-1 and Figure 5-2, overleaf, provides an indication of the AM and PM peak hour development only assignment patterns for the potential growth distribution and references (numbered 1-6) the key corridors likely to be impacted. The outputs show that the flows will be heaviest along the key corridors such as the A259, A21, A269, A2100 and A2690 throughout the district. In particular, the A259, through Bexhill and into Hastings, and the A21, north towards Kent, are likely to have the greatest impact. These patterns could be subject to change when a development option is assessed in detail using the countywide full assignment model, where traffic may seek out alternative routes across the network to avoid congestion.

5.4.2 Highway link capacities and impacts

Observed 2019 road link flows, taken from peak hour traffic counts at or near key junction approaches, have been factored to a 2040 forecast year, using TEMPro and committed development growth, as a Reference Case. The STEB development only flows are then added to establish the forecast Local Plan scenario. Table 5-3 overleaf compares the directional impact of 2019 and 2040 Reference Case plus this potential growth distribution peak hour flows with the hourly theoretical highway link design capacity for key routes across the district (see location references in Figure 5-1 and Figure 5-2). A link is generally considered to be approaching theoretical capacity when the volume over capacity (VOC) is between 75%-90%, given there is insufficient spare capacity to address typical +/- flow changes throughout the peak hour. This provides an early indication, prior to the consideration of further capacity constraints at individual junctions, of how severely different roads will be impacted and whether there is generally sufficient network capacity.

AM Actual

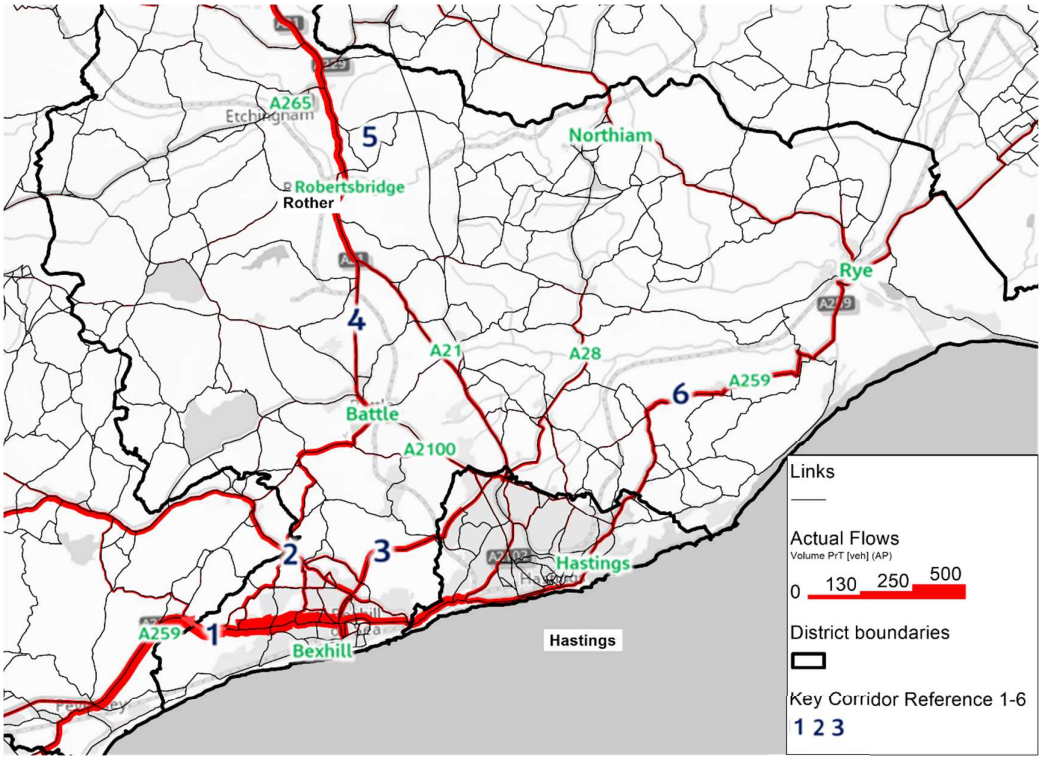


Figure 5-1 Isolated Rother Local Plan Indicative Flows AM Peak

PM Actual

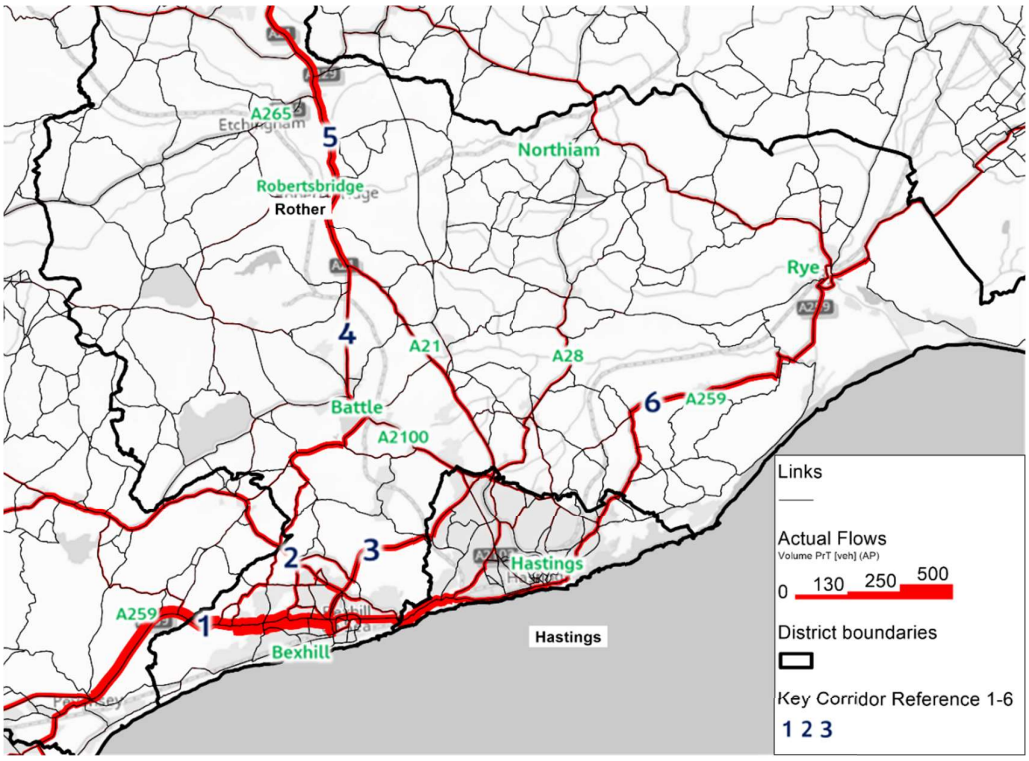


Figure 5-2 Isolated Rother Local Plan Indicative Flows PM Peak

Table 5-3 2019 & 2040 Isolated link flows, capacities and volume over capacity (%)

Ref	Count Location	DIR	One-way Link Capacity	AM Peak Hour Observed Flow (2019)	AM VoC ratio (2019)	AM Peak Hour Ref Case Flow (2040)	AM flow from STEB model (2040)	AM VoC ratio (2040)
1	A259 (Bexhill)	EB	1344	647	48%	765	346	83%
		WB	1344	851	63%	1007	162	87%
2	A269 (north of Bexhill)	NB	1680	503	30%	595	77	40%
		SB	1680	499	30%	590	58	39%
3	A2690 (between Bexhill and Hastings)	EB	1686	809	48%	957	125	64%
		WB	1686	690	41%	816	95	54%
4	A2100 (Battle)	NB	1328	270	20%	319	75	30%
		SB	1328	317	24%	375	52	32%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	759	57%	898	191	82%
		SB	1328	704	53%	833	98	70%
6	A259 (Winchelsea)	EB	1328	347	26%	411	106	39%
		WB	1328	409	31%	484	78	42%

Ref	Count Location	DIR	One-way Link Capacity	PM Peak Hour Observed Flow (2019)	PM VoC ratio (2019)	PM Peak Hour Ref Case Flow (2040)	PM flow from STEB model (2040)	PM VoC ratio (2040)
1	A259 (Bexhill)	EB	1344	788	59%	924	194	83%
		WB	1344	856	64%	1003	334	99%
2	A269 (north of Bexhill)	NB	1680	590	35%	691	103	47%
		SB	1680	373	22%	437	137	34%
3	A2690 (between Bexhill and Hastings)	EB	1686	698	41%	818	104	55%
		WB	1686	741	44%	868	124	59%
4	A2100 (Battle)	NB	1328	458	34%	537	58	45%
		SB	1328	285	21%	334	71	31%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	484	36%	567	114	51%
		SB	1328	730	55%	856	179	78%
6	A259 (Winchelsea)	EB	1328	384	29%	450	91	41%
		WB	1328	250	19%	293	122	31%

The existing traffic conditions indicate the road network is operating within capacity at a highway link level at least. Any existing observed delays and congestion are, therefore, more likely to be the result of individual junction capacity constraints creating localised congestion 'hotspots'.

The addition of background and the isolated Local Plan growth indicates that the A259 in Bexhill (corridor Ref. 1) is likely to exceed theoretical link capacity. The A21, between Robertsbridge and Hurst Green (Ref. 5), will also be approaching capacity leading to potential delays on these corridors. Elsewhere on the network, the impacts of growth are unlikely to pose a significant risk to overall link capacity, however, consideration needs to be given to impacts at specific key junctions along these corridors, which can further constrain capacity and lead to localised congestion on the network, and are discussed later in this section.

5.4.3 Summary of link capacities and impacts

A review of the level of traffic impact on highway link capacity, for key parts of the network in the AM and PM peaks, is summarised in Table 5-4 overleaf, for the 2019 current and the 2040 Reference Case and potential isolated Rother option scenarios. The analysis indicates that:

- The network is generally operating within theoretical link capacity in the current peak hours and any delays and congestion are more likely to be caused by local junction capacity issues. The A259 in Bexhill is approaching theoretical capacity (75%-90%) and most likely to be at risk of congestion and delays at peak times in the future
- The 2040 Reference Case, representing a 'without' Local Plan forecast scenario for benchmarking, includes approximately 18% traffic growth to account for already consented (committed) development and an element of background growth. The A259 will start reaching theoretical capacity at peak times with an increased chance of congestion and delays. The A21 is also starting to approach theoretical link capacity
- The level of growth in the isolated potential growth distribution will have the greatest impact on the A259, where theoretical capacity will be exceeded, and the A21 could be reaching theoretical capacity
- Without mitigation, the level of impact of the potential Local Plan distribution tested is likely to be high on the links approaching 100% and on the A259 in particular. Elsewhere, at a link level at least, the impacts are less severe in both options, however, this will need further consideration at a junction capacity level, which can further constrain capacity on the network and lead to additional congestion and delay

Table 5-4: 2019, 2040 Reference Case and isolated spatial distribution AM / PM VOC (%)

Ref	Count Location	DIR	One-way Link Capacity	AM VoC ratio (2019)	AM VoC Ref. Case (2040)	AM Local Plan Option VoC ratio (2040)
1	A259 (Bexhill)	EB	1344	48%	57%	83%
		WB	1344	63%	75%	87%
2	A269 (north of Bexhill)	NB	1680	30%	35%	40%
		SB	1680	30%	35%	39%
3	A2690 (between Bexhill and Hastings)	EB	1686	48%	57%	64%
		WB	1686	41%	48%	54%
4	A2100 (Battle)	NB	1328	20%	24%	30%
		SB	1328	24%	28%	32%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	57%	68%	82%
		SB	1328	53%	63%	70%
6	A259 (Winchelsea)	EB	1328	26%	31%	39%
		WB	1328	31%	36%	42%

Ref	Count Location	DIR	One-way Link Capacity	PM VoC ratio (2019)	PM VoC Ref. Case (2040)	PM Local Plan Option VoC ratio (2040)
1	A259 (Bexhill)	EB	1344	59%	69%	83%
		WB	1344	64%	75%	99%
2	A269 (north of Bexhill)	NB	1680	35%	41%	47%
		SB	1680	22%	26%	34%
3	A2690 (between Bexhill and Hastings)	EB	1686	41%	49%	55%
		WB	1686	44%	52%	59%
4	A2100 (Battle)	NB	1328	34%	40%	45%
		SB	1328	21%	25%	31%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	36%	43%	51%
		SB	1328	55%	64%	78%
6	A259 (Winchelsea)	EB	1328	29%	34%	41%
		WB	1328	19%	22%	31%

5.5 Districtwide potential development impacts

Further analysis has been undertaken of the high-level traffic impacts of the potential growth distribution at a district level. Table 5-5 and Figure 5-3 summarise total peak hour vehicle trip generation for the potential development located in different MSOA areas in the district and the key corridors these trips are likely to impact.

The potential development considered by this study in the Bexhill urban area (R007-011) is likely to have the greatest impact, particularly on the constrained A259 corridor and the A269 / A2690 corridors, and will generate approximately 50% of all potential development related traffic growth in the peak hour.

The remaining 50% of traffic growth is distributed in key towns, including Battle and Rye, and rural areas across the district. Notably, potential growth in the north, around Ticehurst, Flimwell and Hurst Green (R001), will impact on the A21 corridor and into the neighbouring borough of Tunbridge Wells. Growth around Battle and rural areas

immediately to the north of Bexhill (R006) would impact on the A21 / A2100 / A269 corridors and eventually the A259. Growth tested to the east of the district is smaller in scale and more dispersed, however, this could still impact on the A259 towards Hastings and towards the neighbouring districts of Shepway and Ashford in Kent.

Table 5-5: Total peak hour potential development flows by district MSOAs

MSOA Code	Description	Development Only Total Flow		Key corridors impacted
		AM	PM	
R001	Flimwell, Ticehurst & rural north of district	500	502	A21
R002	Northiam & rural north east of district	286	287	A259
R003	Robertsbridge & rural centre of district	178	180	A21 / A2100
R004	Rye and Winchelsea	272	334	A259
R005	Three Oaks & rural north of Hastings	262	271	A259
R006	Battle & rural area north of Bexhill	341	421	A21 / A2100 / A269
R007-R011	Bexhill urban area	1,864	1,967	A259 / A269 / A2690
Total districtwide potential development flows		**3,704**	**3,962**	

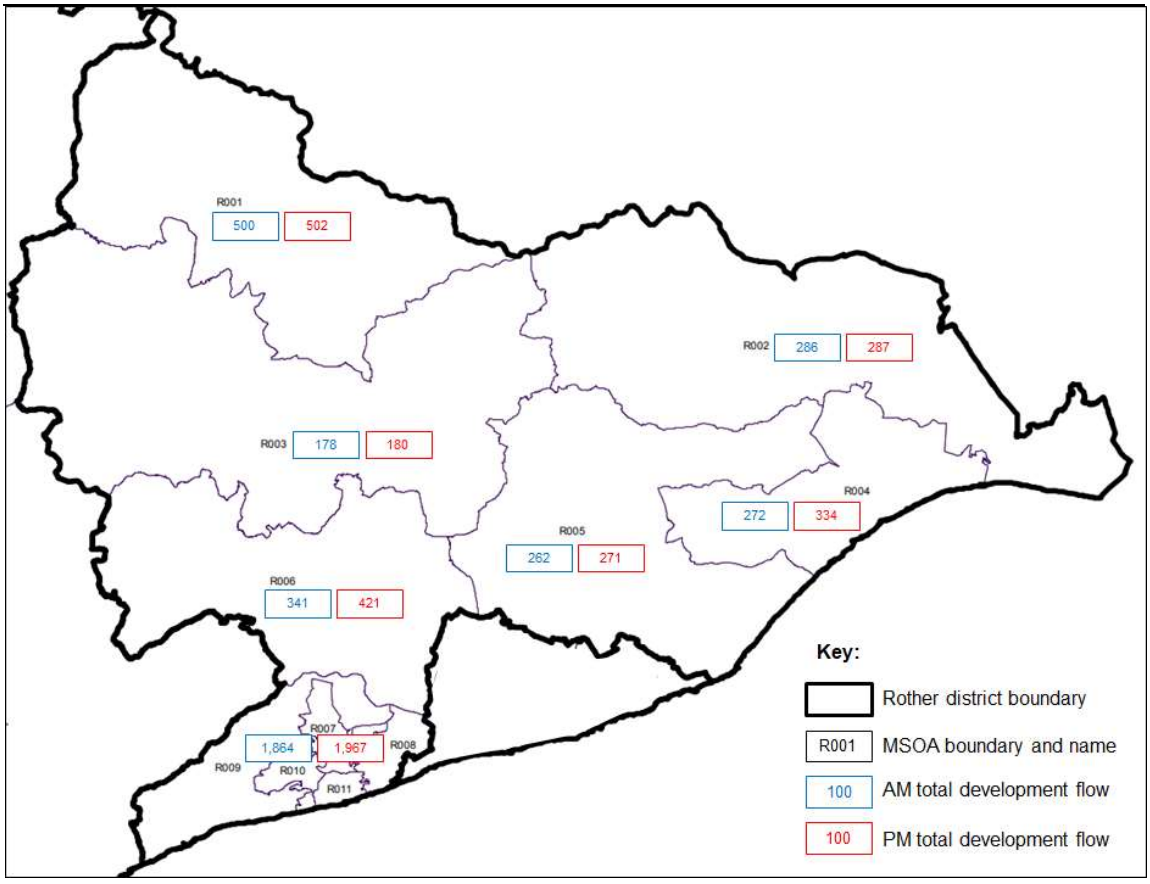


Figure 5-3 Total peak hour potential development flows by district MSOA area (Source East Sussex in Figures – contains public sector information licensed under the Open Government Licence v3.0[11])

11 Open Government Licence for public sector information

5.6 In-Combination 'All District' Sensitivity Test

The STEB model has also been used to test the likely in-combination and cross-boundary effects of additional growth from the emerging spatial strategies of all ESCC districts. It is important to note that this is only a sensitivity test, for information purposes, given each Local Plan is still at the early option testing stage and likely to change. Furthermore, modelled traffic patterns need to be considered within the limitations and assumptions of the STEB model (see Appendix C), the effects of which are potentially amplified by applying STEB cumulatively at a larger countywide scale. The countywide model will provide a more refined tool to analyse these impacts going forward.

As the modelling exercise evolves, agreement will also be needed on how cross boundary growth is treated within the assessment, particularly concerning the level of growth that is included in the reference case and the scale of impact to be mitigated by the new Rother Local Plan

5.6.1 Cross-boundary Growth

The wider growth cross-boundary growth uses the latest Local Plan options being explored by each district in the county. At this stage, two distinct 'Cumulative Options' have been assessed to test alternative growth distributions in neighbouring districts with up to 35,000 new dwellings and 360,000 sqm of commercial (employment / retail) and other floorspace over and above the Rother potential growth distribution. It should be noted that the spatial picture will almost certainly change as neighbouring districts explore alternative options and further assessment of different scales and patterns of development will be needed in the countywide model at a later stage.

5.6.2 Cumulative Impacts in Rother

The additional traffic uplift of the 'Cumulative Options' (summarised in Table 5-6 and Table 5-7 overleaf) demonstrates an approximate average network wide uplift of 8% in the AM peak and up to 13% in the PM peak over and above the isolated assessment. The impact on individual links (see location references in Figure 5-1) is highest on the A259 through Bexhill and the A269 to the north of Bexhill (Ref. 1 & 2). There are also notable increases along other sections of the A259 corridor further to the east (Ref. 6). The A21 and A2690 (Ref. 5 & 3) would see an additional 10% growth.

The new Hastings Local Plan growth could have the greatest impact on the Rother network, particularly the A259 and A21, and account for approximately 25% of the all-district cross-boundary growth. Wealden will also have impacts on key corridors through the district, including the A259 and A269.

The additional impact of the 'Cumulative Options' growth on link volume over capacity (VOC %) is compared to the existing 2019, 2040 Reference Case and isolated Rother potential growth distribution scenarios in Table 5-8 overleaf. The link capacity issues, identified previously in the existing and isolated assessments on the A259 and A21 corridors, will worsen with the A259 likely to exceed total capacity (100%) and the A21 approaching total capacity with a risk of severe congestion and delay. The A269 and A2690 links would also be approaching theoretical capacity (75%-90%).

5.6.3 Cross-Boundary Impacts of Rother Local Plan

The likely cross-boundary impacts of the potential Rother growth distribution have been considered and the greatest impacts would be towards Wealden with additional

two-way peak hour flows of up to 430 vehicles on the A259 and 240 vehicles on the A269 corridors leading west towards Pevensey and Hailsham. These cross-boundary traffic flows would be likely to impact a number of key junctions on the A259 in Wealden including Pevensey roundabout and the B2095/A259 junction.

The Rother growth distribution would also impact on Hastings with up to 400 two-way flows travelling on the A259 between Bexhill and Hastings town centre and an additional 230 vehicles travelling on the A2690 into the north of the district. This traffic would be likely to impact a number of key junctions on the A259 corridor in Hastings including the A259/Harley Shute Road and A259 Filsham Road junctions. In addition, the A2690 Combe Valley Way/Queensway junction would also be likely to be impacted by the cross-boundary development traffic on the A2690.

The Rother growth distribution traffic could also impact on the peak hour flows in some areas of Kent including 375 two-way trips on the A21 corridor leading north through Flimwell towards Pembury and Tonbridge. Kent and Tunbridge Wells Borough Council will need to be engaged as part of the Council's duty to cooperate.

Table 5-6 Additional Net Uplift of Emerging Cumulative Options on Rother AM

Ref	Count Location	DIR	Cumulative 1	Cumulative 2	Uplift to Isolated (vs Cumulative 1)	Uplift to Isolated (vs Cumulative 2)	Uplift to Isolated (vs Cumulative 1)	Uplift to Isolated (vs Cumulative 2)
1	A259 (Bexhill)	EB	1280	1284	168	172	15%	16%
		WB	1326	1327	157	158	13%	14%
2	A269 (north of Bexhill)	NB	739	737	66	65	10%	10%
		SB	720	716	72	68	11%	10%
3	A2690 (between Bexhill and Hastings)	EB	1158	1158	76	75	7%	7%
		WB	992	993	81	82	9%	9%
4	A2100 (Battle)	NB	396	396	2	2	1%	1%
		SB	427	427	1	1	0%	0%
5	A21 (between Robertsbridge and Hurst Green)	NB	1168	1168	79	79	7%	7%
		SB	972	972	41	41	4%	4%
6	A259 (Winchelsea)	EB	574	573	57	56	11%	11%
		WB	604	604	43	42	8%	8%
	Approximate Network Average	**AM**					**8%**	**8%**

Table 5-7 Additional Net Uplift of Emerging Cumulative Options on Rother PM

Ref	Count Location	DIR	Cumulative 1	Cumulative 2	Uplift to Isolated (vs Cumulative 1)	Uplift to Isolated (vs Cumulative 2)	Uplift to Isolated (vs Cumulative 1)	Uplift to Isolated (vs Cumulative 2)
1	A259 (Bexhill)	EB	1360	1364	242	246	22%	22%
		WB	1572	1575	235	238	18%	18%
2	A269 (north of Bexhill)	NB	974	862	179	68	23%	9%
		SB	724	597	149	23	26%	4%
3	A2690 (between Bexhill and Hastings)	EB	1020	1020	98	98	11%	11%
		WB	1092	1094	100	102	10%	10%
4	A2100 (Battle)	NB	596	596	2	2	0%	0%
		SB	407	407	2	2	0%	0%
5	A21 (between Robertsbridge and Hurst Green)	NB	744	744	63	63	9%	9%
		SB	1132	1132	97	97	9%	9%
6	A259 (Winchelsea)	EB	607	607	66	66	12%	12%
		WB	496	495	81	80	19%	19%
	Approximate Network Average	**PM**					**13%**	**10%**

Table 5-8 'Cumulative Option 1 & 2' comparison with Reference Case and Rother Option Link Capacity VoC (%)

Ref	Count Location	DIR	One-way Link Capacity	AM VoC Ratio (2019)	AM Reference Case VoC Ratio (2040)	AM Rother Local Plan Option VoC Ratio (2040)	AM All District Cumulative 1 VoC Ratio (2040)	AM All District Cumulative 2 VoC Ratio (2040)
1	A259 (Bexhill)	EB	1344	48%	57%	83%	103%	103%
		WB	1344	63%	75%	87%	106%	106%
2	A269 (north of Bexhill)	NB	1680	30%	35%	40%	46%	46%
		SB	1680	30%	35%	39%	45%	45%
3	A2690 (between Bexhill and Hastings)	EB	1686	48%	57%	64%	71%	71%
		WB	1686	41%	48%	54%	62%	62%
4	A2100 (Battle)	NB	1328	20%	24%	30%	30%	30%
		SB	1328	24%	28%	32%	32%	32%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	57%	68%	82%	91%	91%
		SB	1328	53%	63%	70%	75%	75%
6	A259 (Winchelsea)	EB	1328	26%	31%	39%	46%	46%
		WB	1328	31%	36%	42%	47%	47%

Ref	Count Location	DIR	One-way Link Capacity	PM VoC Ratio (2019)	PM Reference Case VoC Ratio (2040)	PM Rother Local Plan Option VoC Ratio (2040)	PM All District Cumulative 1 VoC Ratio (2040)	PM All District Cumulative 2 VoC Ratio (2040)
1	A259 (Bexhill)	EB	1344	59%	69%	83%	107%	107%
		WB	1344	64%	75%	99%	122%	123%
2	A269 (north of Bexhill)	NB	1680	35%	41%	47%	61%	53%
		SB	1680	22%	26%	34%	46%	37%
3	A2690 (between Bexhill and Hastings)	EB	1686	41%	49%	55%	62%	62%
		WB	1686	44%	52%	59%	66%	67%
4	A2100 (Battle)	NB	1328	34%	40%	45%	45%	45%
		SB	1328	21%	25%	31%	31%	31%
5	A21 (between Robertsbridge and Hurst Green)	NB	1328	36%	43%	51%	57%	57%
		SB	1328	55%	64%	78%	87%	87%
6	A259 (Winchelsea)	EB	1328	29%	34%	41%	47%	47%
		WB	1328	19%	22%	31%	39%	39%

5.7 Key Junction Impacts

The STEB analysis has identified the key corridor impacts of the Rother Local Plan growth distribution and also the Cumulative 'All District' growth. An initial list of key junctions on these corridors has been identified to understand specific impacts at key nodes on the network, including the SRN and in neighbouring Hastings and Wealden, which could be impacted in the future. These have been determined based on existing Google© typical traffic data, previous studies and in consultation with key stakeholders. The key junctions and corridors are shown and referenced in Figure 5-4

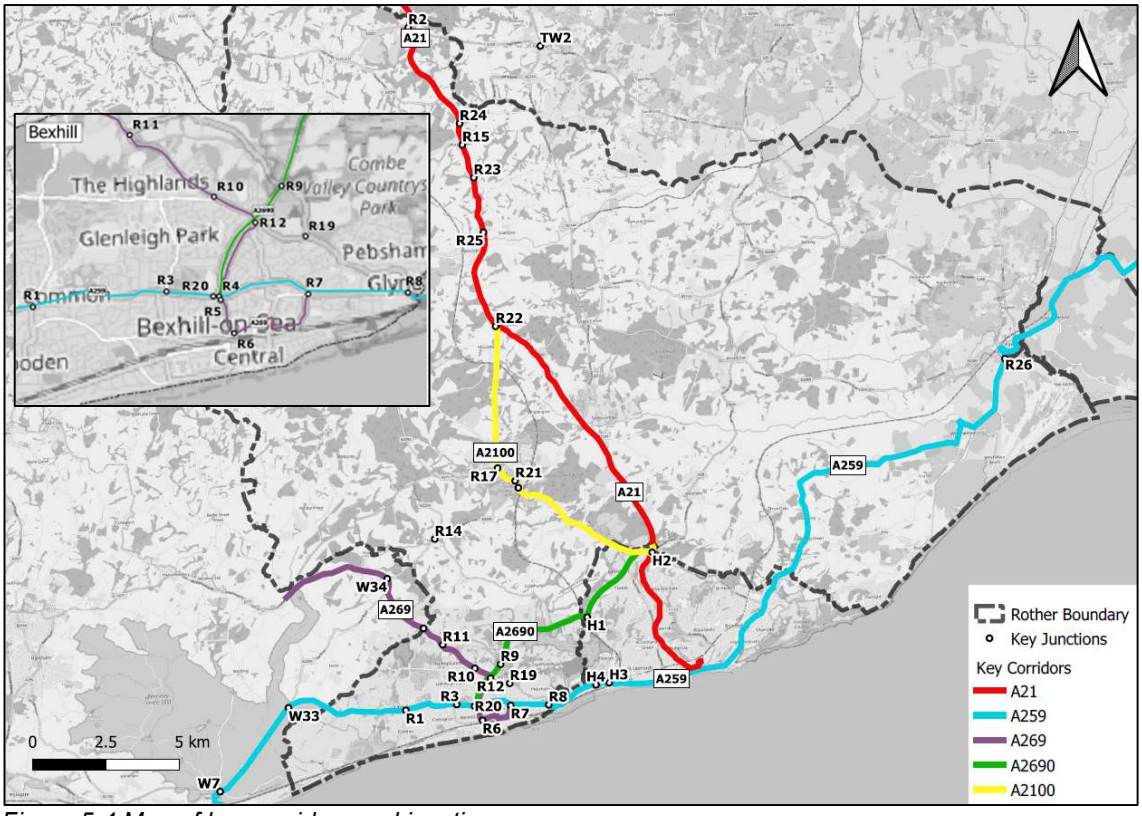


Figure 5-4 Map of key corridors and junctions

The isolated development only total vehicle flows (all junction arms) and percentage impacts at key junctions for the isolated option and the Cumulative 'All District' options are summarised in Table 5-9 with higher impacts highlighted in increasingly darker red.

Table 5-9 Cumulative and Rother isolated development only junction impacts (total veh. / % increase) – AM/PM peak hour

			AM				PM			
Junction	**Ref**	**Corridor**	**Isolated Impact**	**Isolated % Impact**	**Cumulative 1 Impact**	**Cumulative 1 % Impact**	**Isolated Impact**	**Isolated % Impact**	**Cumulative 1 Impact**	**Cumulative 1 % Impact**
Pevensey RBT	W7	SRN	360	No Base	839	No Base	413	No Base	976	No Base
B2095/A259	W33	SRN	388	19%	847	42%	428	20%	966	44%
A259/B2182/Peartree Lane	R1	SRN	681	24%	1157	40%	661	23%	1244	43%
A259/West Down Road	R3	SRN	545	No Base	1053	No Base	540	No Base	1146	No Base
A259/A269	R4	SRN	750	20%	1309	36%	809	22%	1477	41%
A269/Beeching Road	R5	SRN	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
A269/Buckhurst Place RBT	R6	A269	326	No Base	373	No Base	304	No Base	339	No Base
A259/A269/Dorset Road	R7	SRN	323	11%	780	27%	354	14%	917	36%
Glyne Gap RBT	R8	SRN	316	10%	884	29%	321	7%	994	22%
A2691/A2690 RBT	R9	A2960	237	8%	482	16%	251	8%	505	16%
A269/Turkey Road	R10	A269	215	12%	430	23%	231	13%	478	27%
A269/A2691 RBT	R11	A269	206	16%	559	44%	244	20%	634	51%
A269/A2036	R12	A269	221	11%	469	23%	241	11%	532	24%
A2690 Combe Valley Way/A2690 Queensway	H1	A2960	222	10%	469	20%	230	8%	486	17%
A269/Peartree Lane/Potman's Lane	R13	A269	333	23%	714	50%	345	25%	766	56%
Church Road and Church Lane/B2204	R14	-	212	No Base	280	No Base	241	No Base	317	No Base
A269/B2204 RBT	W34	A269	250	No Base	707	No Base	247	No Base	753	No Base
B2095/A2100 RBT	R16	A2100	221	11%	239	12%	269	12%	290	13%
Ten Sixty Six RBT	R17	A2100	184	3%	201	3%	212	4%	231	5%
A265/A21	R15	SRN	322	16%	518	25%	345	16%	560	26%
B2087/A21	R2	SRN	382	20%	538	28%	390	18%	561	25%
A268/A229	TW2	-	125	No Base	157	No Base	129	No Base	165	No Base
Baldslow (multiple junctions) H2A	H2A	SRN	143	6%	229	10%	148	6%	279	11%
Baldslow (multiple junctions) H2B	H2B	SRN	231	9%	535	21%	237	9%	571	22%
Baldslow (multiple junctions) H2C	H2C	SRN	137	6%	494	21%	148	6%	533	20%

Junction	Ref	Corridor	AM				PM			
			Isolated Impact	Isolated % Impact	Cumulative 1 Impact	Cumulative 1 % Impact	Isolated Impact	Isolated % Impact	Cumulative 1 Impact	Cumulative 1 % Impact
Baldslow (multiple junctions) H2D	H2D	SRN	137	6%	528	22%	148	6%	635	24%
A259/Filsham Road	H3	A259	346	15%	1050	46%	383	18%	1292	60%
A259/Harley Shute Road	H4	A259	349	14%	1079	42%	386	15%	1297	51%
A2306/A2691	R19	-	117	6%	325	18%	96	5%	341	18%
A259/Down Road	R20	SRN	606	24%	1123	44%	625	27%	1249	54%
A2100/Marley Lane	R21	A2100	693	No Base	707	No Base	742	No Base	753	No Base
John's Cross (A21)	R22	SRN	270	16%	495	29%	275	14%	526	26%
Silver Hill (A21)	R23	SRN	306	No Base	493	No Base	311	No Base	516	No Base
Cooper's Corner (A21)	R24	SRN	314	15%	510	25%	319	15%	534	25%
Northbridge Street (A21)	R25	SRN	289	17%	476	28%	293	20%	498	33%

The initial STEB modelling of the potential development growth, tested for the purposes of this study, indicates that peak hourly flows could have an impact at key junctions across the network in both the isolated and cumulative assessments, including:

- A21 Corridor – the A21 corridor lies between Hastings and the M25 and provides the key north-south route in Rother. The analysis shows that with this option, there would be some notable increases, in both the isolated and the cumulative with an increase in total flows of up to 20% (+239 vehicles per hour (vph)) in the isolated and 33% (+498 vph) in the cumulative assessment compared to the base. The highest flow increases occur at junctions between Robertsbridge and Flimwell.
- A259 Corridor – the A259 provides the key east-west route in the south of the district. Under this option, the A259 would exhibit some high development flows, particularly in the south-west of the district through Bexhill with traffic increases of up to 24% (+681 vph) in the isolated assessment and 44% (966 vph) in the cumulative assessment compared to the base. A large portion of this traffic would be generated by vehicles travelling to and from potential development sites in Bexhill, however, a similar portion of traffic would be as a result of cross boundary trips from Eastbourne, Wealden and Hastings developments.
- A269 Corridor – the A269 routes between Hailsham and Bexhill, providing a key corridor for vehicles travelling to Rother from north Wealden via the A22. The A269 would exhibit some high development flows, the highest of these being at the Peartree Lane junction on the Wealden/Rother border with traffic increases of 25% (+345 vph) in the isolated and 56% (+766 vph) in the cumulative assessment compared to the base.
- A2690 Corridor - the A2690 is a key corridor for vehicles travelling between Bexhill and the A21 as well as areas in the north of Hastings. Flow increases would be relatively consistent on the A2690 between Bexhill and Hastings. The greatest increases would occur at the A259 junction with traffic increases of 22% (809 vph) in the isolated and 41% (+1477 vph) in the cumulative assessment compared to the base. However, a high proportion of this increase would be a result of vehicles travelling eastbound and westbound on the A259.
- A2100 Corridor – flow increases would be relatively high on the A2100, in particular, the Marley Lane junction where there would be traffic increases of 742 vph in the isolated and 753 vph) in the cumulative assessment compared to the base. A significant proportion of this increase can be attributed to the potential development sites (those submitted to Rother through their Call for sites) near to Battle.

5.8 Assessment Summary

The STEB model provides a high-level assessment of possible future traffic impacts on the key road network in Rother resulting from the potential Local Plan growth distribution tested in this study. It is acknowledged that these impacts could change with any changes to the development option and further testing in the countywide model. The traffic data used is considered robust and ‘worse case’ to stress test network capacity and highlight the potential risks to further congestion, constraints and where mitigation would be most likely needed. The initial analysis of the potential growth distribution tested at this stage indicates the following on the Rother network:

- The key A259 and A21 corridors would receive the greatest impact in both the isolated and cumulative assessments. It is likely that highway link capacity would be reached and potentially exceeded, as well as junction capacity, on these corridors, particularly the A259 in Bexhill
- The A269 and A2690 could also be approaching theoretical link capacity and individual junction capacity could be exceeded at key junctions along these corridors
- The impact on the A259 in Bexhill is influenced by the existing level of traffic, higher concentration of potential residential development located within the town, as well as cross-boundary trips from Wealden and Hastings
- Mitigation, to encourage sustainable modal shift and potential highway improvements are likely to be needed to address impacts on the road network and local congestion 'hotspots' at junctions

The development trip information, including trip rates and journey purposes, would need to be refined through further scenario testing in the countywide model if this option were pursued through the Local Plan process.

6 Sustainable Transport

6.1 The case for mitigation

The STEB modelling indicates that the level of traffic growth generated from the study growth distribution, and from elsewhere in the region, could be significant with parts of the network severely constrained in the future if car dependency is left unchecked. The network is already constrained and interventions are needed to encourage both entrenched and future car use to utilise other more sustainable modes.

An initial review of the likely scale and type of interventions needed to encourage modal shift and reduce predicted levels of car use on the network has been undertaken. These interventions would need to be developed into a comprehensive sustainable mitigation strategy to confirm what is deliverable and how it could support sustainable growth through the Local Plan.

To pursue this growth distribution, a phased approach would be likely to be needed across the plan period, moving from an enhanced 'business as usual' scenario in the short term towards more 'ambitious' scenarios towards the end of the Plan, transforming travel behaviour and responding to new and emerging technologies. Similarly, the study growth distribution is being assessed against forecast traffic patterns some 15+ years in the future, and uncertainties around external drivers of travel behaviour, such as net-zero carbon, technological changes, fuel prices, new ways of working and global events, emphasises the need for a proportionate and flexible approach to delivering specific measures.

This section provides an initial framework of evidence, specific opportunities and challenges facing the potential development option tested in this study (see section 3.1 and Table 3-1) and to outline the potential for modal shift in Rother.

6.2 Wider evidence

The mapping of future travel behaviour trends is subject to levels of uncertainty with different socio-economic, environmental and technological drivers. The following sections explore the wider evidence of where future sustainable scenarios have been assessed and where initiatives have worked in practice, which could be applied in Rother.

6.2.1 TfSE Sustainable Routes to Growth

TfSE[12] have tested distinct scenarios around the drivers of travel behaviour change to arrive at a preferred 'Sustainable Route to Growth', combining economic aspirations with the positive aspects of 'sustainable' and 'digital' futures, including:

- Investment in sustainable transport to support cross-regional travel
- Targeted investment in orbital coastal strategic corridors (especially rail)
- Fast adoption of digital technology

12 Transport Strategy for the South East – Scenario Forecasting Summary Report (Steers 2019)

- Demand management policies

TfSE looks beyond the 2039 Rother Local Plan period and up to 2050. It provides an appropriate projection of the impacts of wider strategy interventions in the region, which could be translated into potential modal shift at a local level. Figure 6-1 illustrates TfSE's expected reductions in forecast car use (-9%), and corresponding increases in sustainable modes for their preferred 'Sustainable Route to Growth'. As part of their scenario testing, TfSE have also explored a potential 'Sustainable Future', where a more ambitious reduction in car use (-15%) might be achievable through a greater focus on demand management.

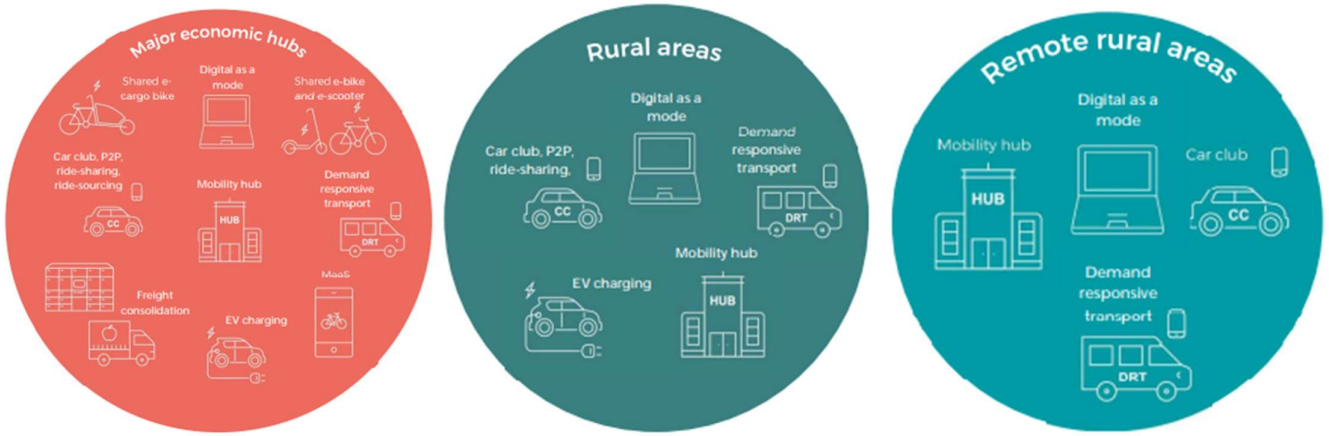
While this latter scenario is not necessarily being prioritised at a regional level and will be challenging to achieve in rural areas, it could be considered in specific locations with the potential to support greater levels of sustainable access, such as the Bexhill urban area and connectivity with Hastings, without compromising potential economic growth.

Figure 6-1 Transport Strategy for the South East, Mode Shift by Scenario (source TfSE 2019)[12]
**Walking and cycling trips potentially fall (-7%) in the Sustainable Route to Growth scenario due to a relative decline in the cost of other modes*

The roles of future mobility and digital connectivity are still in their infancy with only emerging evidence around 'what-works-well-and-where'. The TfSE Future Mobility Strategy[13] sets out a vision for the south east and provides a prioritised framework for 'place-based bundles' for different geographies. Figure 6-2 illustrates TfSE's priorities from very low (VL) to very high (VH) and the range of interventions that could typically be delivered for different parts of the Rother area.

Rother has a diverse, largely rural character with a higher average age than most districts. TfSE classify Hastings and Bexhill together as a coastal Major Economic Hub (MEH), similar to Eastbourne, defined as being less well connected to London and less attractive for London commuters, therefore attributing to higher levels of self-containment. The remainder of the district consists of small towns and villages, classified as rural settlements and smaller villages or hamlets defined as remote rural areas, with lower levels of accessibility, Battle is defined as a local centre.

13 Future Mobility Strategy (TfSE 2021)



Intervention	MEH bundle	Rural bundle	Remote rural bundle
Shared mobility - e-bike	H	L	L
Shared mobility - e-scooter	H	L	L
Shared mobility - P2W (powered two wheeler)	H	M	L
Shared mobility - peer to peer vehicle sharing	H	H	M
Shared mobility - ride-sharing platforms	H	H	M
Shared mobility - business to customer vehicle sharing (e.g. car club)	H	H	H
Shared mobility - ride-sourcing - 'on-demand private hire/taxi'	H	M	M
Shared mobility - digital demand responsive transport (DDRT)	H	VH	VH
Automated (and ultimately autonomous) road mass transit	L	L	VL
Automated (and ultimately autonomous) FMLM shuttles	L	L	VL
FMLM delivery robots / shuttles (land-based)	M	L	VL
Low level air (drones) - freight	L	M	M
Low level air (drones) - passenger	L	L	L
Shared mobility - e-cargo bike	H	L	L
Digital-as-a-mode communications / services	H	VH	VH
Hubs (mobility / community asset / service)	VH	VH	VH
MaaS platform (including mobility credits and gameification)	H	M	L
Digital kerbside management applications	L	L	VL
Consolidation centres (regional, urban, micro)	H	L	VL
Business to business freight capacity exchanges	H	M	M
Business to customer freight capacity exchanges	H	M	M
Flexible streetscape	H	L	VL
Road space reallocation to future mobility modes e.g. lanes, kerb space	H	L	VL
Hydrogen refuelling infrastructure (all modes)	M	L	L
EV charging infrastructure (all modes)	H	M	L

Figure 6-2 TfSE Future Mobility Strategy – 'place-based bundles' priorities for Coastal MEHs, Rural and Remote Rural Areas(very low (VL) to very high (VH))

The TfSE approach provides a framework for Rother to consider as part of their emerging development strategy and start moving from an enhanced 'business as usual' short term future to a more sustainable and technology based longer term future, by applying the following measures to reduce car dependency and ownership:

- Making active travel the first choice for short journeys, particularly in and around the urban area of Hastings/Bexhill
- Improvements to interurban and rural public transport services to improve connectivity and reduce private vehicle dominance
- Placing zero-emission, frequent and accessible public transit connections between homes, places of work and key destinations
- Planning for and adapting to technology 'place-based bundles', reducing car dependency and ownership

6.2.2 Sustainable Travel Towns

The DfT selected three Sustainable Travel Towns (STTs) in 2004, at Darlington, Peterborough and Worcester, to receive a joint total of £10 million in funds to implement 'smart choice' programmes over a period of five years. An evaluation of the longer terms impacts of this investment was undertaken in 2016 to understand the overall effects and concluded that the programmes were broadly successful in meeting these objectives, with a reduction of 7-10% in the number of car driver trips per resident over 10 years.

In all three STTs, the Smart Choices Programme focussed on urban areas with a population of 100-140,000 people. Whilst the towns are not directly comparable to the district of Rother as a whole, the following similarities can be drawn:

- The combined population of Bexhill and Hastings is approximately 135,000, meaning it is a similarly sized urban area.
- Car ownership levels in Worcester (77% of households having at least one car) are higher than the national average – 81% have at least one car in Rother.
- Worcester has more than one railway station serving a variety of destinations, which is also the case for Hastings/Bexhill.
- Darlington is in a largely rural (85%) district, as is Rother.

Whilst Rother is made up of smaller towns and rural villages with relatively high levels of car ownership (81%), 48% of the district's population live in the parish of Bexhill-on-sea, with the greatest potential for modal shift due to the existing connectivity and proximity of Hastings. Rother, as a district, has 12 railway stations with access to a number of destinations across East and West Sussex, Kent, Brighton and London. Rother borders the larger economic hub of Hastings and 15% of commuting trips between Rother and Hastings are made by public transport and active modes.

The STTs of Darlington, Peterborough and Worcester therefore provide positive examples of a range of measures which aim to encourage use of non-car options and discourage reliance on single-occupancy car use which could be replicated in Bexhill, particularly when considered in conjunction with Hastings, where the geography is most similar to the STTs.

Funding will be a key element for any programme in Rother, and both Darlington and Peterborough used wider LSTF and development related S106 funding to increase

their investment over 10 years to approximately £15m each (average >£100 per head of population). The STT approach could reasonably deliver similar traffic reductions, or better with a greater level of investment, in parts of Rother.

6.2.3 Funding considerations

Applying this to Rother will not be straightforward, given the diverse geography, and will require significant investment on key corridors beyond current levels of investment in sustainable transport. It is also acknowledged that a varying package of measures will be required for the various geographies across Rother and measures to reduce car dominance in urban Bexhill may differ to the challenges in the wider rural district. Careful consideration will need to be given to how this can be funded and delivered within the context of the Local Plan Infrastructure Delivery Plan and overall viability. Funding considerations could include:

- The 2021 Autumn Budget and Spending Review included £3 billion for buses (including support for 4000 Zero emission buses). In April 2022 the Government allocated £1.08bn of this funding to Local Authorities, including ESCC, to deliver bus improvements through their BSIPs. The Spending Review also included £2 billion for walking and cycling and £1.3 billion to support the roll out of charging infrastructure for Electric Vehicles
- TfSE have published their draft SIP for their region. Rother is covered principally by the Kent, Medway and East Sussex package of interventions with a capital investment of £19.4bn needed up to 2050. TfSE recognises that funding the SIP will be the principal financial challenge and will involve both making the best use of funds directed from government, and identifying new and innovative approaches that tap into the local and regional value that the interventions could generate. At this stage, schemes have been prioritised into short, medium and longer term delivery timescales with high level advice around the expected next steps to develop the business case and feasibility with key delivery partners.
- The ESCC BSIP and enhanced partnerships with operators will help unlock central funding and further support for public transport as part of a countywide approach
- The delivery of an updated ESCC Local Transport Plan (LTP) 4 will allow available funding for infrastructure and sustainable travel to be tailored to the emerging spatial strategy across the county
- Developer contributions, through Section 106 and Community Infrastructure Levies (CILs), provide the mechanism for securing development specific funding for infrastructure in a district as well as match funding for any available central and regional funding opportunities
- Explore wider funding opportunities, as and when they are announced, to support growth and infrastructure, similar to previous rounds of the Housing Infrastructure Fund (HIF), Local Growth Fund (LGF) and MRN funding, as well as the emerging NH Route Investment Strategy (RIS3) for any impacts on the SRN. While these opportunities have traditionally tended to allocate funding towards highway infrastructure, potentially locking in car dependent growth, a fresh approach is needed to deliver positive outcomes for innovative and sustainable transport infrastructure.
- Conventional appraisal metrics typically focus on car journey time savings and highway capacity, but do not capture carbon, health, wellbeing, economic and

environmental impacts. Consider developing alternative multi-criteria approaches to modelling and appraisal with broader metrics relating to place, social interactions and quality. The DfT Early Assessment Sifting Tool (EAST) could be used with wider metrics to complement the transport planning policy perspective of 'planning for people and places' developed by Professor Peter Jones – UCL (see Table 2-1).

6.3 Sustainable transport and future mobility options

6.3.1 Planning for sustainable transport and future mobility

The emerging Local Plan process is an opportunity to apply a single strategy approach and integrate behaviour change across a range of different interventions to reduce car travel and continue to build consensus and commitment to the Council's vision and objectives.

This approach will need to integrate the infrastructure and technology requirements of physical interventions with the principles of urban design and placemaking as outlined in Figure 6-3. This will maximise the sum of the parts of each intervention and develop a coherent delivery strategy that encourages modal shift and improves the overall fabric of the district's environment and public realm.

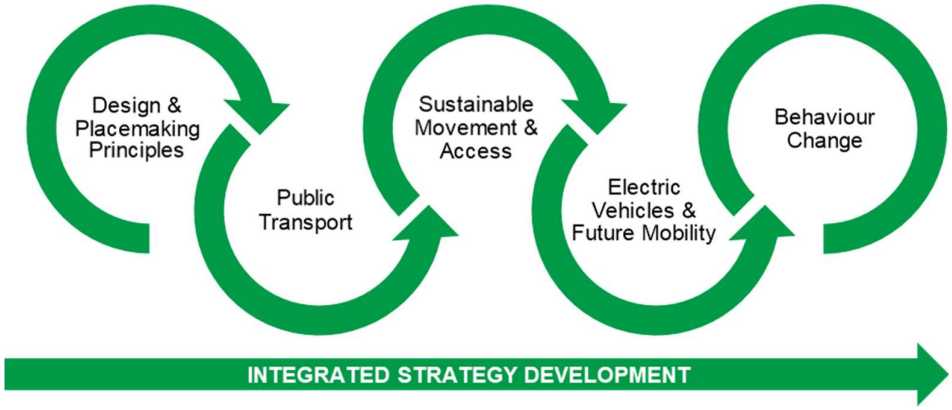


Figure 6-3 Integrating sustainable transport, placemaking and behaviour change strategy

6.3.2 Accessibility at New development

A key component of promoting accessibility to new development is a strategy for 'door to door' journeys which, should primarily be made by walking, cycling and/or public transport. Such a strategy needs to address the wider street, walking and cycling and local bus service networks within the district, ensuring that people can travel from 'door to door' sustainably.

This builds on a parallel Sustainable Transport Audit (STA) study being undertaken to understand the existing level of sustainable accessibility to the potential development sites included in this study option. Analysis included the assessment of travel times and distance between key service attractors (destinations) and potential developments (origins). Further analysis of catchment areas for non-residential and mixed use (residential and non-residential) developments was also undertaken, to assess levels of accessibility to key catchment areas for employees and customers.

For every site, the minimum travel time via public transport, cycle and walk has been calculated to each of the nearest attractor types and accessibility scores were allocated based on journey time bands appropriate for each attractor type and each

mode. This allowed an overall score to be allocated to each site for access to key attractors, for each mode, out of a total score. Scores are expressed as a % with 60%-100% representing good accessibility across all modes (PT, walking and cycling).

Accessibility to key services within reasonable time periods varies widely between different residential locations. Some sites would offer poor accessibility for potential residents to access necessary services via public transport, foot or cycle without intervention, due to the limited accessibility to efficient and reliable rail and bus connections in rural parts of the district.

Figure 6-4 illustrates the collective levels of accessibility by all sustainable modes for the new Local Plan option in relation to the key travel corridors identified to be most impacted by the forecast traffic growth (see section 5).

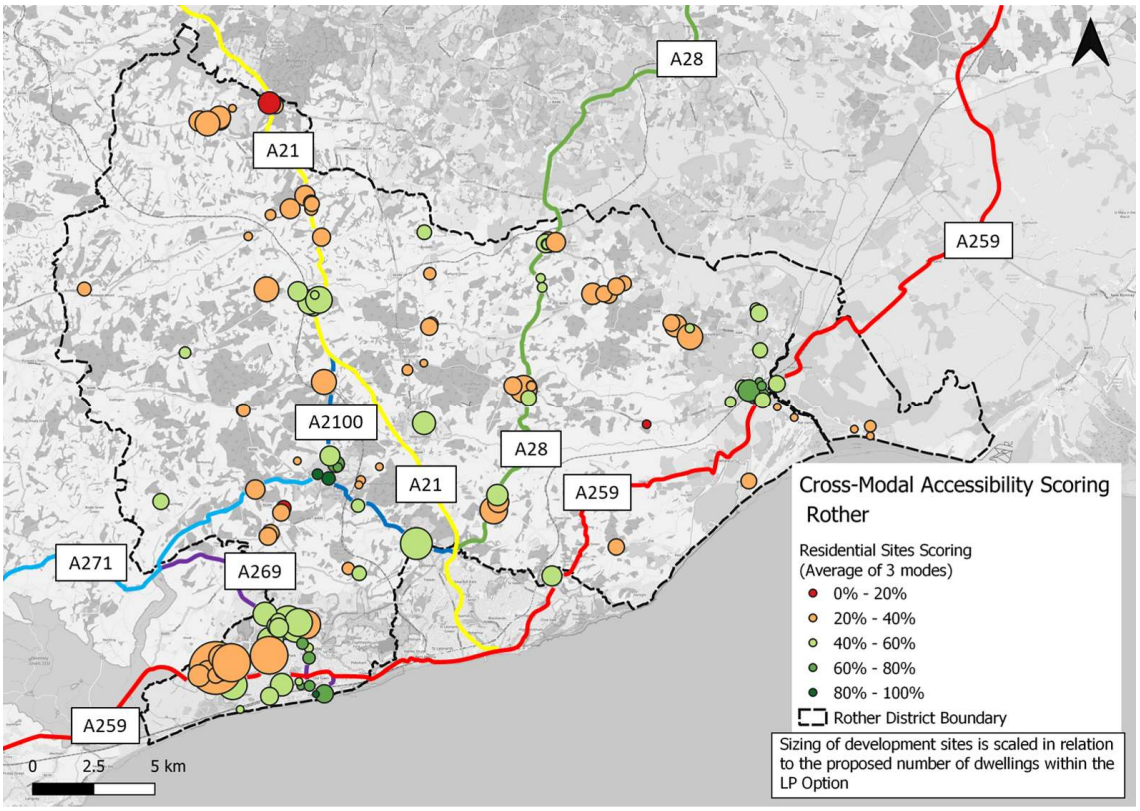


Figure 6-4 Levels of Accessibility of Rother Local Plan sites and key corridors

In Rother, accessibility to key services within reasonable journey-times varies significantly depending on proximity to small urban centres and rail connections. The general accessibility levels are highest (60-100%) in cluster locations within the vicinity of Rye, Battle, Robertsbridge and Bexhill railway station. Over and above this, the general accessibility levels across Rother district are relatively low. The lowest levels of accessibility (0-20%) are located to the north of the district, close to the boundary at Flimwell (High Weald).

The largest potential development clusters – located west of Bexhill – have relatively low levels of accessibility (20-40%), however, developments that are significant in size could include on-site provisions of schools, healthcare centres and other local facilities which would reduce the need to travel for these purposes. Larger developments also provide greater opportunities to implement active and sustainable travel measures,

which could improve public transport, walking and cycling accessibility in these areas further.

Accessibility along key transport corridors, particularly the A21 and A259, varies depending on the proximity to urban and local centres, such as Bexhill, Rye, Battle and Robertsbridge, the availability of rail connection and frequency of bus services. The locations with the highest levels of accessibility (80-100%) are located within the immediate proximity of Bexhill, Rye and Battle railway stations. Several potential sites located to the north of Bexhill have moderate to good accessibility (40-80%) as they benefit from close proximity to multiple rail stations and increased bus services in Hastings and along the A259 corridor. Opportunities and challenges for accessibility at new development are summarised below.

New development accessibility and active travel opportunities and challenges

Opportunities:

- Develop design principles to ensure that active travel and public transport connectivity (c. 400m from most homes) is planned for from the start to deliver attractive and healthy streets from day one and create '15-minute' neighbourhoods where largescale strategic development is proposed
- Explore the potential to improve networks and connectivity to rural settlements and more remote rural areas e.g. potential for demand responsive bus services to supplement traditional fixed bus services
- Secure effective Travel Plans to complement and deliver overarching Rother approach
- Deliver high quality housing close to attractive employment opportunities and/or close to public transport links (for travel outside of the district e.g to Hastings, Eastbourne or London) and key services
- Developer contributions to wider off-site improvements to active travel, bus, car clubs, micro-mobility initiatives, improve crossing facilities on 'key streets' and junctions
- Provide EV charging infrastructure for vehicles, e-bikes and e-scooters
- Deliver ultrafast/5G digital connectivity in urban areas and improve existing 3G/4G connectivity in rural or remote rural parts of the district
- Provide services, live/work balance and 'first/last mile' micro-hubs at larger sites, urban areas or larger villages, where multi-modal interchanges are likely to occur
- Review parking standards and consider car free/reduced parking at potential development in accessible/town centre locations e.g. higher density residential at / or near rail stations

Challenges:

- Unpredictable and phased delivery
- Connecting development in rural or remote rural areas to reliable public transport links
- Negotiating with developers, viability and level of contribution available from development and other sources

- Coordinating meaningful and sustained public transport contributions across groups of developers
- Additional traffic generation on constrained highway corridors e.g. A21 & A259 or railway services (e.g Hastings to London)
- Capacity on existing public transport services and/or frequency of services to remote or remote rural areas of the district

6.3.3 Behaviour change

Behaviour change needs to be a key outcome of the strategy to change 'hearts and minds' and engender a partnership approach. Campaigns have traditionally focused on engagement with businesses and organisations to set up workplace and school travel plans to promote broader travel awareness and underpin more targeted initiatives to reduce car travel. Other emerging interventions, including the following, will also need to be considered as technologies and working practices continue to evolve.

Homeworking / Impact of Covid-19 opportunities and challenges

Opportunities:

In response to the COVID-19 pandemic, many organisations asked their employees to work from home where possible. This work-from-home 'experiment' has potentially accelerated and increased trends towards more flexible and remote working practices, digitalisation, and tele-working. There is consensus that UK businesses aim to implement hybrid work models, signalling that working from home and some level of travel reduction is likely to stay beyond the COVID-19 pandemic.

Analysis of DfT[14] data, comparing recent transport use with pre COVID-19 levels, shows that September 2022 car use is still approximately 5%-8% lower on different weekdays. This offset by an increase in LGV and HGV levels and overall motor vehicle use is nearer 1%-3% lower than pre COVID-19 levels. Rail and bus use are still 10%-20% lower than pre COVID-19 levels and a number of bus routes in Rother are subject to changes[15] and / or reduced levels of service as revenues fall. Levels of cycling have generally seen a sustained increase of 20%-40%.

The data is fluctuating and travel patterns will potentially change as other policies influence behaviour, e.g. cost of living, however the lower levels of car use, higher levels of cycling and the adoption of more hybrid and flexible working arrangements can contribute to reduced and more sustainable travel in the future. Equally, reduced patronage, revenue and investment in bus networks presents a significant challenge that will need further consideration as part of any local or wider bus strategy going forward.

The continued investment and roll out of digital superfast broadband and 5G networks and the facilitation of local teleworking-hubs in new development and key destinations will also enable these travel reducing behaviours in Rother.

[14] Transport use during the coronavirus (COVID-19) pandemic – (DfT 5/10/2022)

[15] A new bus network for East Sussex (Stagecoach September 2022)

Challenges:

- Potential for traffic levels to return to normal once restrictions are lifted without counter measures
- Evidence also points towards a potential substitution effect whereby people might be driving less for work but, at the same time, they might be driving more often for other purposes such as shopping, socialising or recreation at other times of day
- COVID-19 has led to reductions in public transport use, loss of revenue and the potential removal of marginal, yet vital, services
- Impacts on viability, vibrancy and service sector in town centres and the need to travel further for services

Reduced Car Ownership opportunities and challenges

Opportunities:

Car Clubs are short-term car rental services that allow members access to locally parked cars and the ability to pay by the minute, hour or day; car clubs offer an alternative model to private car ownership and can reduce the need for private parking and can encourage individuals to give up car ownership, inspiring a shift towards walking, cycling and public transport, whilst still having access to a vehicle for occasional journeys.

Unlike the other boroughs/districts within East Sussex, there are no existing car clubs operating within Rother. Providing accessible car clubs within the district of Rother (e.g in Bexhill, Rye and Battle) could help to encourage individuals to give up car ownership, inspiring a shift towards walking, cycling and public transport, whilst still having access to a vehicle for occasional journeys.

Car Sharing initiatives or recommendations within large residential areas and/or town and village centres can help to encourage increased vehicle occupancy. Several applications are widely available for mobile phones that can facilitate car sharing and incentives (such as priority parking) can help to encourage uptake, particularly if included within residential or commercial travel plans or packs.

Vehicle sharing opportunities – such as car clubs or car sharing initiatives – are identified by TfSE as a high priority for rural and remote rural areas meaning that their implementation could benefit large areas of Rother district.

Car free development could also be considered in some key settlements, particularly those in and around Bexhill town centre, where it is in close proximity to public transport, mobility hubs or has a high number of short/localised commuter trips. Some development in large strategic sites, where a high level of trip internalisation could be realised, could also be considered for car free or reduced parking.

Case Studies:

Brighton & Hove City Council (BHCC) have recently explored the feasibility and costs of options for a 'Car Free City Centre and Ultra Low Emissions Zone'. Steers have produced an Initial Options Study[16] assessing the potential for car free, managed access and low traffic neighbourhood zones in areas close to Brighton

[16] Car Free City Centre and Ultra Low Emissions Zone: Initial Options Study (Steers Oct-2020)

station and seafront. The outcomes of this study recommended a phased approach to initially implement a car free zone in The Lanes area with the removal of on-street parking, modal filters to restrict through traffic and timed windows for deliveries. This would provide a lower risk starting point to expand wider interventions into other neighbouring city centre areas, including the North Laine / Cultural Quarter and New England Quarter, with additional measures to reduce traffic, improve air quality and improve accessibility for sustainable and active modes.

While Bexhill is not the same scale as the city of Brighton & Hove, the scale of car free, managed access or low traffic interventions proposed in the options assessed could be transferable to neighbourhoods and potential development close to urban stations at Bexhill and Collington. Complementary measures could also provide affordable, accessible and sustainable transport alternatives through local mobility hubs, while maintaining a degree of access for residents or visitors where mobility can only be achieved by car.

Completed in 2002, the **Beddington Zero Energy Development (BedZED) community in Sutton Borough** did not provide specific residential parking spaces with housing and parking must be paid for separately as an annual charge. Separating the cost of parking from housing, and investment in alternatives, including quality public transport, walking and cycling, has resulted in significantly lower car ownership levels (54%) than Sutton Borough as a whole (71%). While Sutton Borough is not necessarily an identical geography to Bexhill, the level of level of car ownership is similar (76%) and the concept illustrates the potential for reducing overall car ownership in carefully selected areas, with good access to public transport at stations and good cycle and pedestrian connections to key services.

Source: Peabody.org.uk

Challenges:

- Repurposing existing car parking for dedicated car club spaces and/or priority parking for car sharing initiatives
- The cost of short-term car hire vs the perceived convenience of car ownership
- Many rural or remote rural parts of Rother could still be a significant distance from a car club / car sharing scheme (likely to be based in Bexhill/Hastings or local centres such as Battle or Rye)

Electric Vehicles opportunities and challenges

Opportunities:

In 2020 the Government announced sales of new petrol and diesel cars will end in the UK by 2030 and over £1.8bn will be invested in infrastructure and grants to increase access to zero-emission vehicles. At a local level, EVs will support the decarbonisation of the Local Plan and the district will need to support their uptake by significantly enhancing the limited existing charging network (only 10 locations across Rother) and through a range of policies e.g. traffic regulation orders, parking

tariffs, residential parking zones and EV on-street infrastructure and at new developments. On-street charging across Rother, on the existing road network, in the form of lamp posts offers is a prime example of how infrastructure can be used to provide additional charging facilities for EVs and help to encourage the overall uptake in their usage.

Challenges:

- EV strategy needed to define the technology and appropriate roll out of infrastructure
- Not necessarily a universal solution to reducing car travel, congestion, overall particulate emissions or car ownership
- Implementing energy networks to supply EV charging infrastructure
- Planning and physical constraints to delivering widespread on-street charging infrastructure

6.3.4 Active Travel

Where possible, walking and cycling need to be the primary travel choices for shorter journeys. The LCWIP schemes provide a valuable starting point to improve the overall active travel environment in Rother to:

- Ensure the existing street network is attractive for walking and cycling
- Improve walking and cycling connectivity between rural and urban areas (as well as cross-boundary into Hastings, where 19% of Rother residents travel for employment)
- Filling in key missing links in the district's existing cycling and walking network
- Reduce severance (e.g caused by railway lines)
- Provide safe and convenient connections to the wider active travel network

Active travel opportunities and challenges

Opportunities:

In 2022 the Highway Code[17] updated the hierarchy for road users placing those most at risk in the event of a collision at the top of the hierarchy. This hierarchy will need to be established around key corridors and local connections to complement the overall public realm strategy. This design approach will promote a move away from car dominated roads and deliver seamless active, public transport and shared mobility sustainable movement corridors. There are a number of opportunities to capitalise on the ongoing LCWIP programme:

- Speed management / limit programme including 20mph zones for residential areas
- Designated quiet Lanes in rural areas
- Gateway / entry treatments into residential areas

[17] The Highway Code: 8 changes you need to know from 29 January 2022 (GOV.UK)

- Continue to identify and address key gaps in the walking and cycling networks
- Improve crossing facilities on 'key streets' and at junctions
- Provide cycle parking and e-bike charging at destinations
- Develop programme of 'sustainable movement corridors' placing active travel, public transport and future shared-mobility at the heart of the network

Potential for cycling:

The DfT Propensity to Cycle Tool (PCT)[18] for England and Wales provides a strategic planning tool and an evidence base to inform future cycling investment and policies that seek a wider shift towards sustainable transport. It tests different scenarios of change, at a local area level (MSOA or LSOA[19]), to understand the potential uptake in cycling that could be achieved in different parts of the country, including:

- the UK Governments target to double cycling in a decade
- a more ambitious 'Go Dutch' scenario, applying cycling levels equivalent to the Netherlands (allowing for English and Welsh hilliness and trip distances)
- greater uptake of e-bikes

Cycling potential is calculated using a function based on trip distance and local gradient. The tool forecasts the following ranges in cycling to work mode share for both Bexhill, smaller towns (Rye and Battle) and rural Rother commuter trips for each scenario compared to the Census 2011 levels (see Table 6-1). This indicates that over and above the Government's policy expectation of doubling cycling, a greater level of investment in infrastructure, engagement and uptake in e-bikes could significantly increase cycling mode share across the district, particularly in the e-Bike scenario (see Appendix E for corresponding plots for each scenario).

Table 6-1 Potential changes to Rother cycling commuter mode share (PCT)

	Census 2011	DfT Target	'Go Dutch'	E-Bikes
Bexhill	2%	4%-5%	15%-18%	22%-25%
Smaller towns	1%-2%	2%-4%	9%-14%	16%-20%
Rural Rother	0.5%-1%	1%-2%	5%-9%	10%-14%

Challenges:

- Inconsistent provision for cycling and walking connecting residential areas and key local trip attractors
- Distance between some rural / remote rural areas and urban or local centres with access to key facilities and/or public transport connectivity
- The demographic of Rother (32% of population >65), vs the region and UK as a whole (16 - 17% >65) could reduce the propensity to use active modes
- Lack of scope for fully segregated active travel on network due to land availability, building lines and on street parking

[18] Propensity to Cycle Tool (PCT) (www.PCT.Bike)

[19] MSOA: middle layer super output area, av. population 7,500 / LSOA: lower layer super output area, av. population 1,650

- Traffic congestion creating unhealthy, unsafe and car dominated environments
- Delivering continuous high quality, safe and convenient routes across the network to ultimately place 'sustainable movement corridors' at the top of street hierarchy
- Severance and safety concerns associated with the level crossings may discourage active travel
- Ensuring the level of healthier active travel activities is not substantially replaced by less active, but more convenient, new sustainable modes, e.g. e-scooters, e-bikes and Bus Rapid Transit (BRT)

6.3.5 Public Transport

The town centre area of Bexhill has a reasonable public transport network, with links along the coast towards Eastbourne and Brighton to the west, Hastings to the east, and further afield to Kent and London. The wider Bexhill area and smaller urban areas, such as Rye or Battle, have lower levels of public transport accessibility and there tends to be a greater reliance on car travel. Many of the remote rural areas within Rother are not served by a frequent bus service or have a railway station, this has the potential to further increase private car dominance in these areas.

Public transport initiatives will therefore need to be at the centre of encouraging transformational change to improve the provision, reliability and access to real-time information for all transport needs in order to reduce private vehicle reliance, particularly for shorter journeys.

Bus opportunities and challenges

Opportunities:

The following opportunities are at various stages of development and being considered along the key movement corridors and cross boundary routes:

- Committed scheme to implement Bus priority measures on Bexhill Road into neighbouring Hastings and improving bus stops in Bexhill
- TfSE are exploring the potential to implement mass bus rapid transit between Eastbourne, Hastings and Bexhill

Movement towards cleaner fuels and EVs for the bus fleet will be needed to support the decarbonisation of the Local Plan and enhance the district environment. The role of autonomous vehicles will also need to be reviewed in the longer term as technology and legislation permits.

With the exception of the coastal settlements (Bexhill, Rye, Fairlight, Winchelsea), the rest of the district of Rother is not well served by a frequent bus service. Whilst none of these areas are directly located on key corridors (where daily bus services do exist), increased bus frequency to rural or remote rural areas – at the provision of at least a single daily service – could help to encourage modal shift and improve public transport accessibility, particularly if the routes link up with railway stations.

Challenges:

- Lack of frequency of some services serving rural parts of the district and the funding challenge of implementing more frequent services

- Overarching strategy is needed to integrate public transport with the Local Plan and other sustainable transport options
- Lack of scope on network for extended sections of fully segregated bus priority due to land availability, building lines and on street parking
- Traffic congestion and severance from level crossings leading to bus journey time delay and reliability issues

Digital Demand Responsive Transport (DDRT) opportunities and challenges

Opportunities:

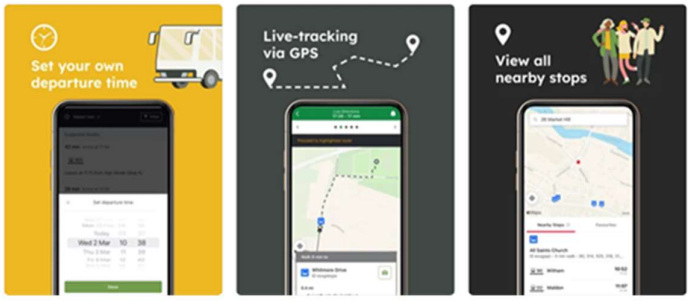
ESCC are currently considering options for DDRT through their Bus Service Improvement Plan (BSIP). A number of UK schemes have trialled DDRT buses in recent years and they are seen as a potentially more flexible alternative to conventional buses, particularly for less profitable and rural routes, and would be expected to use cleaner fuels with the opportunity to ultimately be autonomous as technology permits.

DDRT has the potential to connect rural and remote rural parts of Rother with urban / local centres (e.g Bexhill, Battle, Rye) and railway stations without running a frequent daily service and would provide a significant improvement on current accessibility levels. DDRT is identified as a very high priority for rural and remote rural areas within TfSE's Future Mobility Strategy.

Case study:

Essex County Council, as part of their Technology Strategy for Transport, undertook two pilot studies in 2018/19 to explore the effectiveness of digital tools to make passenger transport more efficient. These involved digitising home to school journeys through a commercially available app to match shared routes, vehicles and passengers. The pilots deployed a demand responsive service, over six months, to two relatively inaccessible colleges to explore demand, awareness of the scheme, route optimisation and revenue potential.

The pilots applied a data-led approach to demonstrate DDRT was technically feasible and provide a flexible alternative to traditional modes of travel or fill gaps in the transport network. This led to a successful £2.5m bid through the DfT's 2020 Rural Mobility Fund to deliver two DDRT services to connect and level-up areas in Essex that currently have little or no provision of public transport. "DigiGo"[20] was launched in 2022 connecting rural areas, to the south of Braintree and in central Essex, to key services and transport interchanges. Services are booked through a bespoke TravelEssex app (see figure), allowing users to specify when and where they want to travel, their fare and also monitor



TravelEssex App (source Essex County Council)

[20] https://www.essexhighways.org/getting-around/ddrtdigigo/digigo

vehicle progress in real-time. The app also provides additional information on other available multi-modal options e.g. buses, trains and micro-mobility options (e-scooters and bike hire).

Challenges:

- Developing successful business models to minimise any public subsidy and provide a good level of service
- DDRT is not necessarily a cheaper alternative and it should be seen as part of a blended solution with conventional fixed route services

Bus-based Rapid Transit (BRT) opportunities and challenges

Opportunities:

Fully segregated BRT would provide one of the greatest opportunities for modal shift in a district like Rother, particularly on the key A21 and A259 corridors. The physical segregation of bus services from traffic enables BRT services to operate with a limited-stop service to enhance the directness and reduce journey times. A review of international[21] case studies demonstrate that BRT is emerging as a leading mode of urban passenger transit. Success partly accredited to the evidence of moderate implementation costs, whilst maximising existing resources and stakeholder buy-in. The research indicates BRT can deliver significant reduction in car use on key corridors.

Case Study:

Key examples in the South East include:

- Fastway in West Sussex (opened 2003) - 19% reduction[22] in traffic levels on key corridors from 2006-2013
- Fastrack at Ebbsfleet, Kent (opened 2006) - 19% of BRT passengers previously used private vehicles

The schemes rely on fully integrated, high quality bus services with segregated corridors to deliver improved and reliable public transport journey times to achieve modal shift. TfSE identify the need for mass transit / BRT in their draft SIP (2022) and are currently assessing the concept of as part of their outer orbital and south-central radial area studies (due in 2022) including the potential to improve intra-urban, rural and inter-urban services on key corridors serving Bexhill, neighbouring Hastings and the wider Rother areas. The constrained A259, particularly between Bexhill, Hastings and Eastbourne, will stand to benefit most from a potential BRT solution and help deliver the principle of 'sustainable movement corridors'.

21 Effects of New Bus and Rail Rapid Transit Systems – An International Review (Ingvardson and Nielsen 2018)
22 Crawley Fastway Case Study (Greener Transport Council)

Challenges:

- Number of service providers and complexity of negotiating with several parties on ticketing prices and mechanisms
- Physical and environmental constraints of land availability, building lines, on-street parking and network capacity to deliver fully segregated bus priority
- Uncertainty, complexity and cost of delivering rapid transit and required infrastructure
- Delivering energy networks for cleaner buses e.g. EV or hydrogen fuelled

Rail opportunities and challenges

Opportunities:

TfSE identify rail travel as a priority in their draft SIP, Sustainable Route to Growth and, together with Network Rail and other stakeholders, are currently exploring longer term options to improve rail services in the region, including the concept two-stage upgrade to the **Marshlink High Speed** services:

- **Partial** – to include a new hourly service from Eastbourne/Bexhill/Hastings to London St Pancreas, a dedicated train in the peak which will join the Dover train in the off-peak. The upgrade will provide a 35-minute journey time saving from Bexhill direct train to London; and,
- **Full** – to include upgrade between Bexhill and Hampden Park to further reduce journey times, in addition to the partial scheme this will provide a 45-minute journey time saving for Bexhill direct train to London.

The concept scheme – at both partial and full stage – would significantly improve public transport connectivity between Bexhill and London, where the existing hourly direct service to London Victoria takes approximately 2 hours (or 1 hour 47 minutes via a change at Hastings). The improved connectivity would benefit proposed allocations along the south coast of Rother.

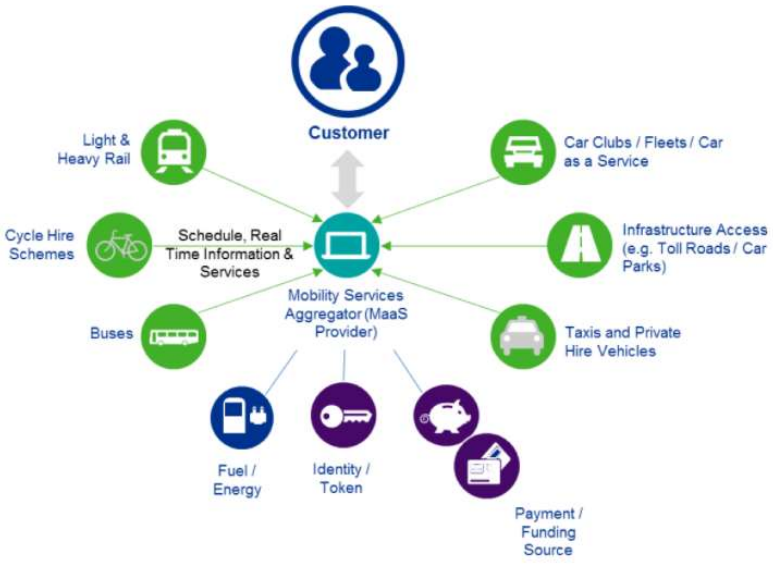
Bexhill, Rye and Battle Railway Stations could also benefit from the introduction of a Mobility Hub (see below) offering improved interchange to a range of first and last mile active or micro-mobility options, better access to bus services and a complementary high quality public realm offer.

Challenges:

- Uncertainty, complexity and cost of delivering rail solutions and required infrastructure
- Integrating services across all modes to optimise interchange at a mobility hub
- Improvements will have less impact in rural and remote rural areas where distances to rail stations are longer and multi-modal trips (possibly made by private vehicle) are still required

6.3.6 Future mobility

The trajectory towards future mobility is less certain than more traditional interventions and it will take time to pilot, evaluate and deliver a specific strategy for Rother. Partnerships with established providers and digital incubators can work towards securing the transport data needed for the development of Mobility as a Service (MaaS), smart ticketing and digital demand responsive options. MaaS, as illustrated in the figure opposite[23], is the use of digital technology to seamlessly integrate and enhance public and private transport services through better journey information, integrated ticketing and payment systems to meet the complete mobility needs of the customer.



In practice, customers could have a choice of either pay-per-ride or monthly subscriptions where pre-purchase 'mobility packages / bundles' allows a customer to consume mobility across all providers participating in the scheme up to set limits e.g. a certain amount of travel by e-bike, travel by bus, use of a car club etc.

The concept of MaaS is still in its infancy and schemes are being rolled out with varying degrees of success across the world. The following opportunities and challenges will need to be considered as a starting point for future mobility measures.

Mobility as a Service (MaaS)

Opportunities:

The long-term trajectory for travel planning is likely to be towards MaaS. Establishing a steering group at an early stage, between key local authorities, transport providers and MaaS advisors, will ensure collaboration and sharing of knowledge as technology develops to tailor a MaaS strategy that is workable within both an urban and rural Rother context.

Establishing digital platforms for transport services, with real-time trip planning, can provide the opportunity to better manage demand across the network by using pricing mechanisms to incentivise travel at less busy times, by more sustainable modes and make travel more accessible to a range of different user groups.[24]

Moovit currently provide a branded mobility application with real-time travel planning and information services in parts of East Sussex. Rother could seek to establish an

[23] MaaS Concept (Source: Greener Transport Solutions)

[24] Mobility as a Service (MaaS) in the UK: change and its implications (Government Office for Science 2018)

integrated fare payment system through Moovit as the company has successfully provided this service elsewhere through their 'plan, pay, and ride' system.

Case Study:

In March 2018, Transport for West Midlands (TfWM) joined forces with MaaS Global/Whim to trial the UK's first app-based MaaS scheme integrating taxis, National Express buses, Midland Metro trams, local train services, city bikes, rental cars and car club vehicles. The trial ended in 2021 and, while overall participation was lower than expected, lessons learned from the scheme have shown that a transport authority-led approach to MaaS was the right fit for the region and TfWM are in the process of tendering for a new MaaS partner. The key difference from the pilot being that they will look to build this on top of TfWM's successful Swift smartcard ticketing system.

Evidence is generally limited at this stage and the data from the TfWM Whim trial is commercially sensitive and not readily available. However, a 2019 study undertaken by Ramboll Group[25] of a similar MaaS Global/Whim scheme in Helsinki, implemented in 2017, highlights possible emerging travel trends associated with the scheme:

- A higher proportion (63%) of Whim members ride public transport than the metropolitan average (48%)
- Whim users are more likely to combine different modes with public transport including bicycle and taxi to solve the issue of first and last mile
- 95% of Whim trips are made by public transport and 68% of all Whim trips occur in areas with the highest public transport accessibility
- Amongst speculation that unlimited MaaS packages might lead to a significant upsurge in total trips and travel, the number of daily trips made by Whim users is similar to the metropolitan average (3.4 per day)
- Cycling, walking, and not just private car, trips could be replaced by increased uptake of public transport and taxi trips leading to potential active travel, health and well-being disbenefits

Challenges:

- Inertia to change and uncertainties around appropriate business model and likely return for investors and partners
- Management of pricing and revenue distribution due to the complexity of the different fare systems and partners involved
- Negotiating with a number of major transport providers and procurement barriers to the range of services
- Unanticipated societal and environmental implications that could arise from a wholesale adoption of MaaS e.g. reduction in active travel, increased use of taxis to replace car trips
- Establishing a secure and accessible digitally connected eco-system

25 WHIMPACT Insights from the world's first Mobility-as-a-Service (MaaS) system (Ramboll 2019)

Shared Mobility Travel Hubs

Opportunities:

Mobility/Travel Hubs consist of decision, movement and opportunity spaces for users to seamlessly navigate between primary transport modes with more appropriate active or micro-mobility (e-scooters) travel modes to conveniently fulfil the first or last mile of a journey. Hubs can, but not exclusively, be provided at key public transport interchanges, such as railway and bus stations, to encourage modal shift for longer journeys and provide secure, convenient and safe interchange between modes. A network of micro-hubs would also enable end-to-end destinations to access different travel options, such as docking-hire stations, a car club (peer to peer vehicle sharing) or cycle freight, at a local level to support reduced car ownership and the burden of parking.

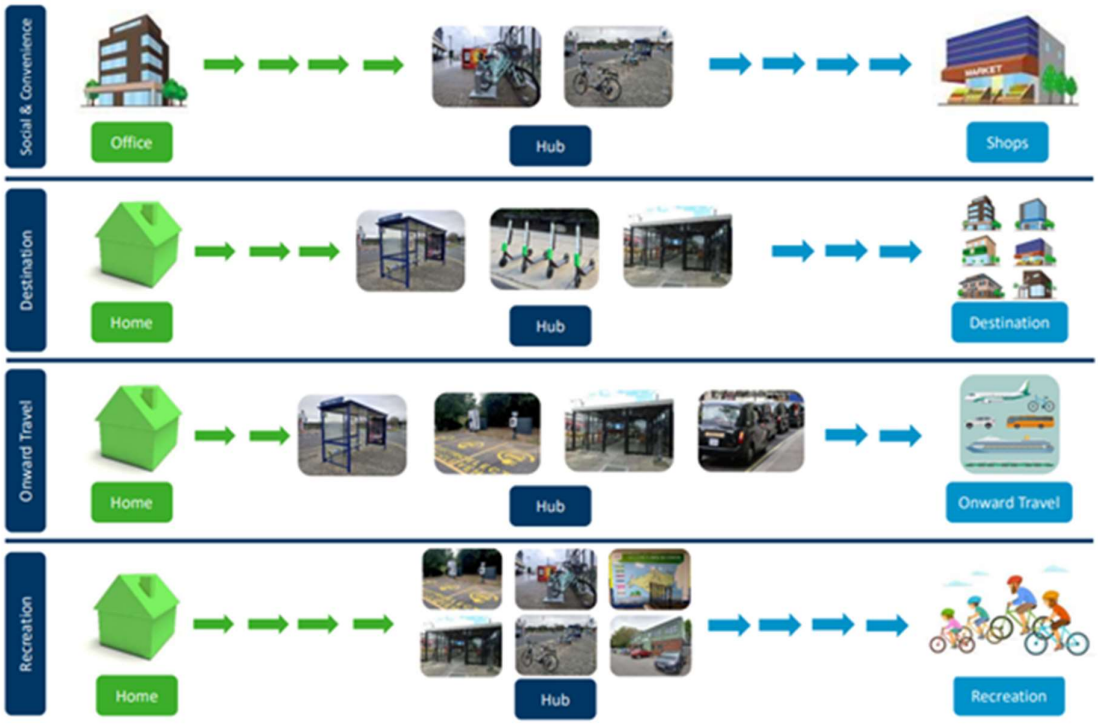
The integration of strategic mobility hubs at Bexhill's stations and more destination-based hubs at key employment or education sites with a network of districtwide micro-mobility hubs will provide realistic and affordable mode choices to support the Council's vision for the district.

Case Study:

Solent Transport have developed a design guide[26] to help councils and transport authorities deliver successful Mobility Hubs for communities. The guide identifies four key purposes the hub could be used for:

- Destination – a hub that enables users to access a key destination e.g. place of work, gym, hospital or education and provides a range of mode choices including public transport, bicycles and scooters
- Onward travel – a larger hub located adjacent to connections with other modes of transport e.g. rail and bus stations where the use will be for a longer period of time and largely during commuting hours
- Social and Convenience – a smaller hub that allows the user to make shorter trips by bus, cycle or scooter with a quicker turnaround of use and linking key destinations
- Recreation – a hub linking users with events, leisure destinations and access to rural areas. Hubs may be seasonal or temporary and provide different transport options to cater for a broader range of users.

26 Mobility Hub Design Guide (Solent Transport)



Mobility hub design concept (Source: Solent Transport)

Challenges:

- General lag with uptake, uncertainty and complexity of technological advancement and delivery
- Funding and investment and who takes ownership of delivering hub and securing necessary travel options
- Achieving 'critical mass' of hubs and micro-hubs to deliver truly flexible, convenient and accessible options for all

Freight and last-mile deliveries

The movement of freight and last-mile delivery to homes and businesses is growing with the rise of on-line shopping and digital services. The number of LGVs on the road is expected to rise by more than 20% (DfT)[27] over the next 15 years. COVID-19 restrictions have also increased deliveries for many goods and Royal Mail[28] has forecast that UK parcel volumes in the Business-to consumer (B2C) and Consumer-to-all-parties (C2X) sub-sectors will grow at approximately 5% per annum in the medium term. Local Plan growth will influence this and there are a number of opportunities and challenges that could be considered to make last-mile freight delivery more sustainable in the district's communities:

27 Road Traffic Forecasts 2018 (DfT)

28 Last mile urban freight in the UK: how and why is it changing? (Government Office for Science – 2019)

Opportunities:

- Freight, loading and delivery restrictions and / or consolidation points (e.g. lockers) in new development to reduce the number of trips, distances travelled and encourage use of more sustainable modes for last-mile delivery
- A network of cargobikes and e-cargobikes (see opposite) at mobility hubs and appropriate destinations can form a part of a district-wide shared mobility system
- 'Lifestyle' couriers are becoming more common, often app-based and using sustainable transport modes, they provide a more flexible interface with the main logistics provider
- Mobile depots (see opposite) and micro-consolidation hubs can be used as staging posts on the edge of congested urban centres for smaller sustainable transport modes to undertake the last-mile delivery
- Technology and innovation will also play a significant role with the application of improved GPS tracking, dynamic route optimisation and the emerging potential of autonomous drone delivery vehicles in the air and on the ground being trialled e.g. Amazon, DHL and Matternet

e-cargo bike (Source: Cycling UK)

Mobile depot (Source: STRAIGHTSOL)

Challenges:

- Carriers' ability to cope with the ever-growing demand for parcel deliveries during peak periods will require additional infrastructure investment
- Consumers are demanding ever-faster, more reliable and convenient delivery services
- Rise in less efficient B2C and C2X deliveries with high first-time failure rates, lower drop densities and higher inter-drop distances
- Competition for road space between kerbside deliveries, priority for sustainable active and public transport modes and impacts of road traffic delays
- Impact of 'free' delivery options leading to low pricing models and restricting investment in more efficient infrastructure and cleaner carrier fleets
- Physical, legal and regulatory barriers to autonomous airborne and land-based drone delivery technology

6.4 Potential for modal shift

The wider evidence, discussed above, indicates that a package of different mobility solutions has very good potential to reduce car use in parts of the district, such as Bexhill, and reasonable potential in some of the smaller and more rural locations, notably:

- Up to 10% reduction in car trips with area wide 'smarter choice' travel strategy and investment similar to the Sustainable Travel Town (STT) programme in Bexhill and neighbouring Hastings
- Potential for Bus Rapid Transit (BRT) to reduce car use by up to 20% on key corridors, within the district and cross-boundary, and be complemented by enhanced partnerships with bus operators and Digital Demand Responsive Transport (DDRT) services in rural areas
- Continued investment, scheme delivery and promotion of the health and wellbeing benefits of cycling and walking, coupled with greater uptake of e-bikes, could significantly increase cycling and walking mode share for trips within parts of the district

The TfSE regional target of a 9% reduction in overall forecast car trips (see Figure 6-1) is a realistic ambition for a location similar to the Bexhill area of the district. With a more joined up approach with neighbouring Hastings, increased investment, delivery of frequent bus-based rapid transit and by embracing a more 'sustainable' and 'digital' future, a greater reduction (>10%) could be achieved by the end of the Local Plan period.

At a smaller settlement (Battle and Rye) and rural level, a lower level of modal shift is more likely to be achieved, providing there is sufficient investment and improved connectivity at a wider scale. A reduction of 5% in overall forecast car trips is more likely to be achieved with some potential to exceed this if a more 'sustainable' and 'digital' future can be secured by the end of the Local Plan period.

These are **headline average modal shift targets as a starting point at this stage** and equates to reducing the overall number of forecast peak hour car trips by 10%+ in the Bexhill area and 5%+ in the smaller settlement / rural areas. The level of reduction will vary across the district network, subject to the eventual schemes delivered and for specific trip purposes, e.g. higher modal shift for urban shorter trips versus lower modal shift on wider cross-boundary trips and less accessible locations. Further modelling will be needed in the countywide model to undertake more detailed mode shift analysis of specific measures, journey-purposes and corridors to understand a more precise geographical distribution of modal shift on the network.

Acknowledging that a package of measures will need to be delivered at intervals across the Local Plan period, with varying levels of complexity based on cost, deliverability and technological advancement, the following timescales (see Table 6-2) set out an indicative evolutionary timeline for modal shift across the varying Rother geographies.

Table 6-2 Overarching mitigation timeline

Stage	Timescale	Geography	Reduction in car trips*	Rationale
'Enhanced Business as Usual'	0-5 years	Bexhill Urban	**0%-5%**	Continuation of current policies and interventions with increased funding, supporting behaviour change strategy and enhanced bus partnerships and services
		Rural	**>0%**	
'More Ambitious'	5-10 years	Bexhill Urban	**5%-10%**	Initial BRT services, improved rail, car free development, electric vehicles, shared-mobility and early digital roll out
		Rural	**2%-5%**	
'Digital Sustainable Future'	10+ years	Bexhill Urban	**>10%**	Full segregated BRT, full digital roll out and reduced car ownership in urban areas
		Rural	**>5%**	

**District-wide average % reduction in forecast modelled car trips across the network*

The following sections highlight specific transport-related measures, across different modes, that could be implemented in Rother, and a summary action plan to help achieve the 'more ambitious' and 'digital sustainable future' mode shift targets set out above.

6.5 Framework Action Plan

The case for mitigation has identified a likely scope of interventions that are potentially needed as a minimum requirement to support the Local Plan. The package is by no means exhaustive and will need enhancing, adapting and complementing throughout the Local Plan period and within the context of the emerging TfSE draft SIP. Further work around feasibility, funding and engagement will also be needed to develop this framework into real-world solutions.

The eventual strategy will need to focus on types of journeys (short, medium and long distance) and the most appropriate mode for different movement corridors. Figure 6-5 illustrates an outline mitigation strategy based on the following four key zones with different travel characteristics and measures:

- **Zone 1 (Town Centre)** would focus primarily on walking, the quality of public realm and experience of Bexhill as a high-quality place. It will support passenger transport access into the town centre and a strategic focal point for a district-wide network of mobility hubs, last-mile freight consolidation and digital solutions
- **Zone 2 (Wider Urban Area)** would see walking and cycling prioritised, along with passenger transport access throughout the urban area and into the adjacent urban area of Hastings
- **Zone 3 (Wider Commuter Areas)** wider cross-boundary urban areas where improved connectivity to bus or rail passenger transport could support inbound and outbound commuting
- **Zone 4 (Strategic Movement Corridors)** represents key strategic road and rail corridors to be developed and / or improved over time to deliver improved passenger transport (BRT, enhanced bus services and rail), segregated priority, integrated ticketing and substantial corridor-oriented mode shift within the district, wider region and towards London

- **Zone 5 (Rural Areas)** continued support and investment in rural bus services and active travel connectivity with key services and National Cycle Network. Improve digital connectivity and opportunities for DDRT services to support traditional bus

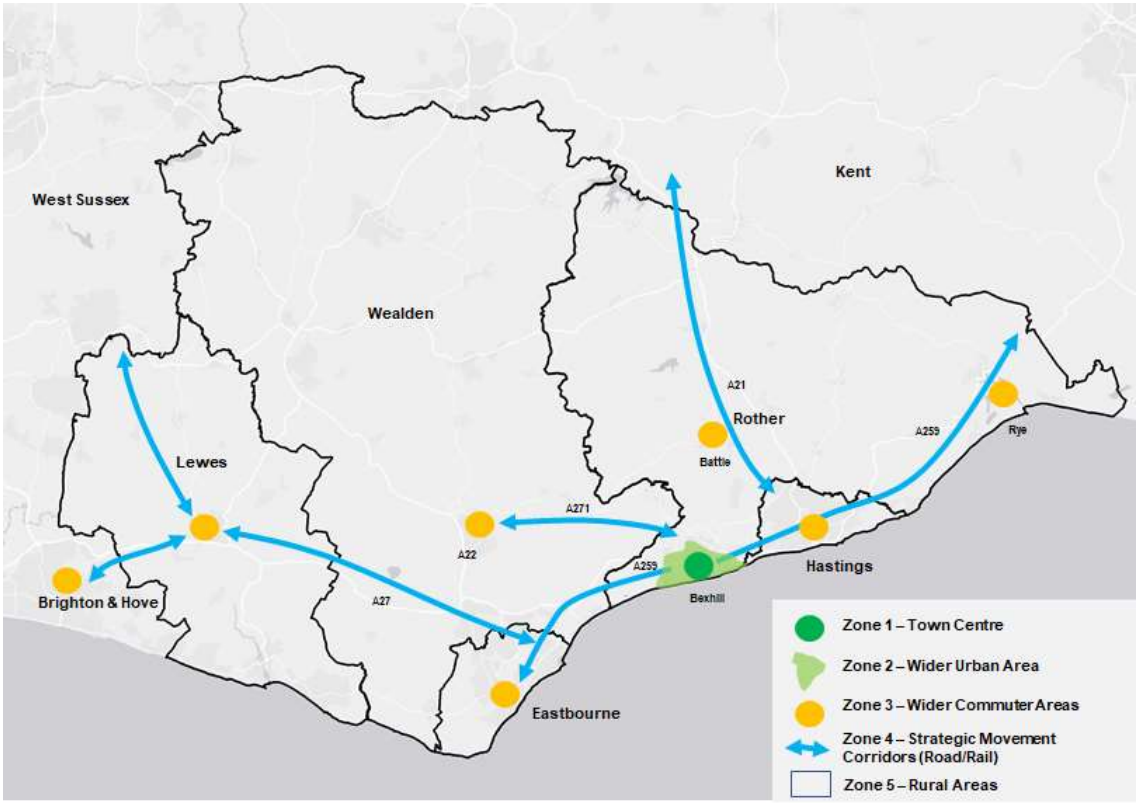


Figure 6-5 Outline mitigation strategy - Rother

A suggested framework outline action plan to deliver the scope of potential measures needed, to achieve the headline reduction in car trips, is summarised in Table 6-3 to Table 6-5 to reflect the proposed strategy timeline of moving from an 'Enhanced Business as Usual' to a 'Digital Sustainable Future'. The action plan includes both the known scheme pipeline and additional measures, highlighted in blue, at key locations to deliver the range of sustainable options to support the Council's proposed vision and objectives.

6.5.1 Outline Action Plan: 0 to 5 years 'Enhanced Business as Usual' – target 0%-5% car trip reduction

Table 6-3 'Enhanced Business as Usual' Potential Measures - 0 to 5 years

Scheme Location / Package	Mode	Measures
A259 Corridor	All	1. Signal re-timing at the A259/A269 London Road junction 2. Improved entry and roundabout markings on the A259 Little Common Road junction
LCWIP & town centre cycle routes – All corridors and urban/local centres	All Active	3. Prioritisation and roll out of LCWIP schemes to all corridor, town centre and new development (where possible, interacting with and connecting into those also planned in neighbouring Hastings) 4. Improved cycle parking in urban areas and at new developments
Bexhill Road	Bus	5. Introduce bus priority measures on Bexhill Road 6. Implementation of bus stop improvements on Bexhill Road between Glyne Gap and Filsham Road
Develop Branded Travel Behaviour Change Strategy and Campaign	All	7. Develop districtwide branded strategy and campaign with public transport operators, ESCC, local groups and digital incubators & service providers
Public Transport – Districtwide	Bus/Rail	8. Enhance partnerships with existing operators and ESCC 9. Develop districtwide public transport strategy and action plan in partnership with ESCC, TfSE rail and bus operators 10. Explore TfSE opportunities for BRT 11. Explore role of DDRT to complement fixed network and improve connectivity between rural villages and Bexhill, Hastings, Battle and Rye
New Developments – Districtwide	All	12. Locate development in the locations with the greatest potential to promote improved public transport, active and shared mobility access 13. Develop design principles to plan for sustainable movement in and around new development 14. Reduce parking, where feasible and supported, in urban areas and depending on proximity to key rail corridors
Mobility Hubs – Key destinations	Bus/Rail/ First Mile Last Mile	15. Improve interchange for bus and 'first and last mile' travel modes at Bexhill, Battle and Rye railway stations. 16. Explore potential to create mobility hubs for a range of modes at stations, larger residential developments and village clusters
Electric Vehicles (EV) – Districtwide	Low Emission Vehicles	17. Develop district-wide EV strategy and action plan in partnership with ESCC 18. Increased roll out of EV charging infrastructure on-street and at key destinations 19. Greening of public transport fleet to low-emission vehicles and deliver associated energy networks e.g. hydrogen
Future Mobility / MaaS / Shared-Mobility	All	20. Develop districtwide Future Mobility strategy and action plan in partnership with ESCC, TfSE and digital incubators & service providers 21. Engage with shared-mobility providers e.g. car clubs, e-scooters and explore potential for micro-mobility hubs 22. Engage with infrastructure providers to deliver ultra-fast broadband and 5G coverage

'Sustainable Movement Corridors' – Districtwide	Bus/Active/ First Mile Last Mile	23. Develop a movement and access strategy and action plan to create seamless public transport and active mode movement corridors between Bexhill and neighbouring key urban centres, including Eastbourne and Hastings

6.5.2 Outline Action Plan: 5 to 10 years 'More Ambitious' – target 5%-10% car trip reduction

Table 6-4 'More Ambitious' Potential Measures - 5 to 10 years

Scheme Location / Package	Mode	Measures
A259 Corridor	All	24. Small scale local widening to improve capacity at the A259/A2036 Glyne Gap roundabout 25. Consider the partial signalisation of A269/A2036 Holliers Hill junction
LCWIP & cycle routes – All corridors and urban centres	All Active	26. Continued roll out of LCWIP schemes and districtwide cycle schemes
TfSE Bus-based Rapid Transit – Districtwide and Cross-boundary	BRT	27. Phased roll out of core BRT and early infrastructure requirements
Marshlink High Speed Service	Rail	28. Introduction of a new hourly service from Bexhill to London St Pancras throughout the day (dedicated train in the peak, joins Dover train in the off-peak) to result in a 35-minute journey time saving between Bexhill direct to London 29. Develop case for the diversion of the A259 at the Star and Guldeford level crossing to the east of Rye to allow for improved rail journey times
TfSE Rural / Interurban Bus – Districtwide and Cross-boundary	Bus	30. Roll out district-wide public transport strategy and action plan 31. Enhance multiple rural / interurban routes to interface with BRT via traditional fixed services and DDRT
Branded Travel Behaviour Change Strategy and Campaign	All	32. Roll out districtwide branded strategy and campaign with established partners
Additional highway enhancements	All	33. Monitor local junction capacity, public transport and active mode improvements to support Local Plan mitigation if required (see Section 0)
Reduced car ownership	All	34. Implementation of car clubs across the district, car sharing initiatives and priority parking for these measures in urban areas 35. Lower parking at developments in urban areas or close proximity to key rail corridors
Key Destination Mobility Hubs & Micro-mobility Hubs - Districtwide	Bus/Rail/ First Mile Last Mile	36. Create strategic and micro-mobility hubs at key destinations, including Bexhill railway stations and at wider and peripheral locations; micro-mobility hubs located in small rural centres (Battle, Rye)
Electric Vehicles (EV) – Districtwide	Low Emission Vehicles	37. Continued roll out of EV Strategy, energy networks and charging infrastructure 38. Low/Zero Emission public transport fleet
Future Mobility / MaaS / Shared-Mobility	All	39. Roll out MaaS consumer platform and digitally demand responsive shared-mobility options across network of mobility & micro-mobility hubs 40. Establish fully connected ultra-fast broadband and 5G coverage in urban areas and improve 4G connectivity in rural and remote rural areas

Scheme Location / Package	Mode	Measures
'Sustainable Movement Corridors' – Districtwide	Bus/Active/ First Mile Last Mile	41. Commence delivery of early infrastructure for 'sustainable movement corridors' including reduced traffic, segregated sustainable modes and on-street parking removal on core network 42. Explore opportunities for further 'sustainable movement corridors' on other parts of the network

6.5.3 Outline Action Plan: 10 to 15 years 'Digital Sustainable Future' – target >5% - >10% car trip reduction

Table 6-5 'Digital Sustainable Future' Potential Measures - 10 to 15 years

Scheme Location / Package	Mode	Measures Rationale
West Bexhill Multi-Modal Corridor	All	43. Ongoing work to explore opportunities to implement a multi-modal corridor to the west of Bexhill – including linkages with A259 Brighton-Eastbourne- Pevensey (South Coast) MRN corridor
Marshlink High Speed Service	Rail	44. Rail upgrade between Bexhill and Hampden Park to further reduce journey times resulting in a 45-minute journey time saving for Bexhill to London direct train
Electric Vehicles (EV) – Districtwide	Low Emission Vehicles	45. Comprehensive EV charging network and conversion of district car and fleet ownership in line with net-zero targets
Additional highway enhancements	All	46. Monitor local junction capacity, public transport reliability and active mode improvements to support Local Plan mitigation if required (see Section 7)
MaaS / Shared-Mobility	All	47. Roll out MaaS consumer platform and digitally demand responsive shared-mobility options across network of mobility & micro-mobility hubs 48. Update Future Mobility Strategy to explore and adapt to emerging technologies e.g. automation
'Sustainable Movement Corridors' – Districtwide	Bus/Active/ First Mile Last Mile	49. Complete core network of fully segregated 'sustainable movement corridors' 50. Explore potential for automation at a corridor level

6.6 Headline outcomes

A set of suggested initial headline outcomes, which generally respond to the approach discussed in this section, are listed in Table 6-6. It is important to note that these provide an initial framework as they are underpinned by an interim evidence base. The preferred outcomes that the eventual strategy will seek to deliver need to be tailored with further transport assessment work and agreed with the Council and key stakeholders throughout the development of the Local Plan transport evidence base.

The Local Plan horizon year of 15+ years in the future and uncertainties, around external drivers of travel behaviour, emphasise the need for a more flexible, monitor and manage approach to delivering these outcomes. A monitoring and evaluation strategy would be an important component of any strategy to develop evidence around the effectiveness and future delivery of different interventions and to measure the eventual agreed outcomes.

Table 6-6 Initial Strategy Headline Outcomes

	Initial Headline Outcome
1.	An average reduction in forecast car trips of 5%-10+%, or more, of journeys to work made by sustainable modes across the district before the end of the Local Plan period
2.	Transport network is sustainable, easy to access, convenient and inclusive to all and connects housing with key services and employment
3.	Strong culture of walking and cycling placing active modes as the default travel choice, where possible, for short trips across the district (e.g between rural fringes of Bexhill, Battle and Rye into the urban and/or local centres), and additionally cross-boundary trips from Bexhill to neighbouring Hastings.
4.	High quality, segregated, frequent and rapid public transport is available that competes with car journey times, convenience and serves key destinations within and outside the district
5.	Resilient transport network which, where possible, can adapt and respond to changing technologies, trends and associated opportunities
6.	Transport system contributes to achieving the commitment for a carbon neutral Rother including uptake of zero-emission vehicles and solutions to reduce freight and last-mile delivery journeys

7 Highway Mitigation Options

7.1 Overview

The objective of this phase of work is to understand the risks posed to the transport network by Local Plan growth and provide early options, which align the Council's vision for a carbon neutral town, to mitigate the impacts. While the focus needs to be on sustainable solutions, it is acknowledged that a 5-10% reduction in car use is unlikely to remove the more severe impacts of potential Local Plan growth, and some form of improvements to highway capacity may be needed. This section provides an initial capacity and concept review of the key district junctions listed in Table 7-1 (see Figure 5-4 for locations). Any design commentary is purely observational at this stage and subject to more detailed design feasibility and assessment in both strategic and local junction models. Larger scale version of the review summaries are included at Appendix F.

Table 7-1 Key district junctions

Ref	Junction	Corridor	Ref	Junction	Corridor
R1	A259/B2182 Little Common Rbt	A259	R11	A269/A2691 roundabout	A269/A2691
R3	A259/West Down Road	A259	R2	B2087/A21	A21
R4	A259/A269	A259	R24	Cooper's Corner	A21
R7	A259/A269/Dorset Road	A259	R15	A265/A21	A21/A265
R8	Glyne Gap RBT	A259	R23	Silver Hill	A21
R9	A2691/A2690 roundabout	A2691/A2690	R25	Northbridge Street	A21
R12	A269/A2036	A269/A2036	R22	John's Cross	A21
R10	A269/Turkey Road	A269			

The review translates the outputs from the initial STEB model assessment, the potential for modal shift and, making use of available local junction modelling from National Highways, advises on potential capacity solutions at the key junctions. Consideration is also given to the possible cross-boundary effects that the Rother Local Plan could have on key parts of the network and any emerging mitigation requirements from the related wider STEB work in other districts.

This is an early concept review of key junctions only and applies an average 5%-10% modal shift car trip reduction to the isolated Local Plan traffic growth with additional consideration given to the likely impacts of the emerging Cumulative options on the network. Further testing in the countywide model could identify different results, as well as stress elsewhere on the network, which will need further consideration, updated assessment and potential solutions.

7.2 A259 SRN Corridor

The STEB modelling indicates that the A259 SRN corridor in the west of the district, is likely to be heavily constrained at a link capacity level, which is a key consideration

over and above whether any further junction mitigation would be needed. Notwithstanding the link capacity issues, a review of key junctions has been undertaken with the anticipated future growth.

Junction modelling has been undertaken for (R1) A259/B2182 Little Common roundabout. The modelling indicates that Barnhorn Road (A259 (W)) in the AM and Little Common Road (A259 (E)) in the PM would experience significant delays. All other arms except Cooden in both the isolated and cumulative options would operate within capacity. The review (see

Site R1- A259 / B2182 / Peartree Lane (Little Common Roundabout)

Scheme Proposal: Convert the existing roundabout to a signalised junction

Impacts and Constraints:

- Five-arm oval-shaped roundabout connecting key routes, including A259 Little Common Rd. The principal flow is likely to be along the A259 corridor with heavier north-south flows on Peartree Lane and Cooden Sea Road
- Rother Local Plan will add approximately 650-750 veh per hour to the junction in the peak periods approximate 22-27% increase from without Local Plan scenario
- In total, 2,870 veh per hour (two-way flow) are forecast on the A259. A peak directional flow of 1,520 veh per hour on the A259 eastbound will exceed theoretical link capacity of 1,300-1,400 veh per hour
- High-level modelling indicates delays would generate on A259 (W) Barnhorn Road in the AM and A259 (E) Little Common Rd in the PM. All other arms would operate close to capacity and mitigation is likely to be required
- Potential mitigation could include conversion to signals - noting that the war memorial and five-arm junction arrangement will be key constraints. A feasibility study is needed to build on previous NH studies and look at options

Opportunities:

- Consider converting to signals and potentially rationalising number of approaches if suitable alternative routes can be found
- Select Vehicle Detection (SVD) for the future to implement bus priority measures
- Relocation/incorporation of bus stop and improved public realm and access to war memorial
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists can be accommodated at the junction along the desire line

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Figure 7-1) highlights that the existing war memorial on the central island and the five-arm arrangement are a key constraint to any local highway changes. Furthermore, consultation with NH has highlighted that an improvement option will be difficult to achieve at this location and previous studies have struggled to identify a solution.

It is likely that the only option will be to consider signals either as a signalised cross roads or roundabout. The solution will also need to incorporate the war memorial and existing bus stop on the northern side of the junction into any design.. Further modelling, design and consultation will need to explore how the number of approaches can be realigned and / or rationalised. Select Vehicle Detection (SVD) should be implemented to enable bus priority measures to be included with any signal option.

Site R1- A259 / B2182 / Peartree Lane (Little Common Roundabout)

Scheme Proposal: Convert the existing roundabout to a signalised junction

Impacts and Constraints:

- Five-arm oval-shaped roundabout connecting key routes, including A259 Little Common Rd. The principal flow is likely to be along the A259 corridor with heavier north-south flows on Peartree Lane and Cooden Sea Road
- Rother Local Plan will add approximately 650-750 veh per hour to the junction in the peak periods approximate 22-27% increase from without Local Plan scenario
- In total, 2,870 veh per hour (two-way flow) are forecast on the A259. A peak directional flow of 1,520 veh per hour on the A259 eastbound will exceed theoretical link capacity of 1,300-1,400 veh per hour
- High-level modelling indicates delays would generate on A259 (W) Barnhorn Road in the AM and A259 (E) Little Common Rd in the PM. All other arms would operate close to capacity and mitigation is likely to be required
- Potential mitigation could include conversion to signals - noting that the war memorial and five-arm junction arrangement will be key constraints. A feasibility study is needed to build on previous NH studies and look at options

Opportunities:

- Consider converting to signals and potentially rationalising number of approaches if suitable alternative routes can be found
- Select Vehicle Detection (SVD) for the future to implement bus priority measures
- Relocation/incorporation of bus stop and improved public realm and access to war memorial
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists can be accommodated at the junction along the desire line

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Figure 7-1 A259/B2182/Peartree Lane (Little Common Rbt) concept review summary

The review of the (R3) A259 / West Down Road is summarised in Figure 7-2. The A259 is a busy single carriageway road and it is expected that the volume of traffic would exceed the overall link capacity. Therefore, vehicles turning from West Down Road would find it difficult to find gaps in through traffic, and delays would occur that would need mitigation. Potential mitigation could be to convert the two priority junctions into a standard roundabout or to provide a signalised junction, potentially involving the realignment of split West Down Road into a single arm approach. Further investigation of the land on the northern side of the A259 is needed to confirm any designations e.g. Town Green or common land status and availability for realignment. Select Vehicle Detection (SVD) should be implemented to enable bus priority measures to be included with any signal option.

Site R3- A259 / West Down Road

Scheme Proposal: Explore right turn lanes, roundabout or signalised junction

Impacts and Constraints:

- Priority junction formed of main A259 and two minor approaches of Western Down Road either side of green space to the north and leading to Turkey Road and eventually the A269
- Local Plan will increase demand along the A259 by around 540 veh per hour in isolated Rother option and around 915 veh per hour in cumulative scenarios, during the peak periods
- In total, 2,650 veh per hour (two-way) are predicted along this section of the A259. The A259 is likely to be exceeding theoretical link capacity of around 1,400 to 1,500 veh per hour in both peaks in certain directions
- It would be challenging for West Down Road traffic to find gaps in through traffic and the lack of right turn lanes and a westbound bus stop on the A259 could result in delays and mitigation is likely to needed
- The mitigation options could be to convert into a normal roundabout or a signalised T-junction, potentially rationalising the West Down Road approach into a single arm
- Key constraints include land availability, specific designations and further feasibility assessment is needed of potential options

Opportunities:

- Converting existing priority junction to a signalised layout expected to generally accommodate the forecast Rother Isolated and Cumulative Local Plan flows
- Improved pedestrian facilities to meet desire lines
- Select Vehicle Detection (SVD) for the future to implement bus priority measures, in case proposed layout would be signalised

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Figure 7-2 A259/West Down Road concept review summary

The review of the (R4) A259/A269 London Road junction is summarised in Figure 7-3. The junction is within the London Road – Sackville Road Enhancement Area (adopted Development and Site Allocations (DaSA) Local Plan – Policy BEX16). As part of a

planning application for the former High School site near the A259/A269 junction, NH has agreed with the developer that appropriate mitigation measures can be made to the existing traffic signal-controlled junction. It is understood that the developer of the site will be required to provide this mitigation. Furthermore, the developer has proposed a design at the Beeching Road/London Road to provide a mini-roundabout (shown in Figure 7-3) to improve traffic management and issues of queuing traffic backing up along London Road onto the junction with the A259. In addition to this main design change, the proposed highway layout includes improving the pedestrian crossing point located across Beeching Road.

For the existing A259/A269 Little Common Road junction the major flow is expected to be along the A259 corridor and in between the A259 and A269. Peak directional traffic of approximately 1,600 vehicles per hour is predicted on the western arm of A259 (in both directions in the peak hours) and operates over its link capacity. All other arms are not expected to experience any major link delays. High-level modelling conducted for this junction using a model previously used in a National Highways' study has assumed a potential improvement of a segregated left turn slip in operation on the A259 (W) arm.

In terms of capacity, it is predicted that in the Local Plan scenarios there could be significant delays on all arms, critically on both A259 approaches and the A269 right turning movements. It is suggested that there are opportunities to extend the right turn lanes at the A259 and A269 approaches to increase the junction capacity, however, this would involve land take outside of the existing highway boundary.

Site R4- A259 / A269 London Road Signals Junction

Scheme Proposal: Former High School Site development to provide committed mitigation. Additional mitigation could consider revised pedestrian arrangements and additional right turn lane capacity on all approaches

Impacts and Constraints:

- Four-arm signalised junction connects key north-south A269 London Road / Coombe Valley corridor with the main east-west A259 corridor
- Cumulative Local Plan scenario will add approximately 630-840 veh per hour during the peak periods (lowest in the PM peak), almost 17-23% increase from without Rother option
- In total, 3,150 veh per hour (two-way) are predicted along this section of the A259 (W) with peak directional flow of around 1,600 veh per hour on the western A259 arm and exceed link capacity of 1,300-1,400 veh per hour
- The A259 and A269 approaches, particularly right turns, are likely to be exceeding capacity and subject to delays in both peaks with all the Rother and cumulative growth
- Option to build on potential committed improvements from nearby former High School development consent and previous NH options to improve a left turn slip on the A259 and explore additional lane capacity on main approaches and revised pedestrian crossing arrangements to improve capacity
- Key constraints will include land availability and what is achievable within building line

Opportunities:

- Opportunities to extend the right turn lanes at the A259 and A269 approaches – which is likely to require land take outside the existing highway boundary
- Explore options to improve pedestrian crossing arrangements and staging

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Figure 7-3 A259/A269 Signalised Junction concept review summary

The review of the (R7) A259/A269 Dorset Road junction is summarised in Figure 7-4. Local Plan growth is expected to have the greatest impacts along the A259 corridor and A269 Dorset Road at the A259/A269 Dorset Road junction. The Isolated Local Plan scenario will have a 14% increase in traffic and the Cumulative Local Plan scenario will have a 27% increase at this junction. High-level modelling shows the largest delays would be in the AM peak hour on A259 (W) and Dorset Rd North but these arms would still operate within their saturation level. At this stage, further capacity is not expected to be needed at this junction. ESCC are currently assessing options to improve active travel at the junctions using NH funding.

Site R7- A259 / A269 / Dorset Road Signalised Junction

Scheme Proposal: Significant mitigation, other than retiming of signal staging, unlikely to be needed at this stage

Impacts and Constraints:

- Four-arm signal junction connects key A269 Dorset Road corridor with the A259 corridor. Majority of the LP flows are expected to be along the A259 corridor and A269 Dorset Road.
- Isolated Local Plan will add approximately 320 veh per hour (14% increase) to the junction during the peak periods and Cumulative scenario will add almost 460 veh per hour (18% increase) at this junction.
- Peak directional EB flow of around 1,185 veh per hour is predicted on the western arm of A259 and likely to be within theoretical capacity (1,300-1,400 veh per hour). Other three arms expected to be within capacity.
- High-level modelling indicates potential for some delay in the AM peak hour on A259 (W) and Dorset Rd North arms but retiming of signal staging could keep the junction within overall capacity
- At this stage, and subject to further modelling, significant physical junction improvements are unlikely to be required

Opportunities:

- The existing signalised layout is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility
- Select Vehicle Detection (SVD) for the future to implement bus priority measures
- Incorporate options being considered by ESCC (via NH funding) to improve the junction for active modes and overall public realm

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Figure 7-4 A259/A269/Dorset Road Signalised Junction concept review summary

The review of the (R8) Glyne Gap Roundabout is summarised in Figure 7-5. The major flow direction at the Glyne Gap roundabout is between the A259 (E) and A259 (NW) and A2036 arms. It is anticipated that the isolated Local Plan will increase traffic by 18% and this could increase to more than 30% with cumulative growth.

High level modelling predicts that the western arm of the A259 will exceed the threshold link capacity. All the other arms would operate below their capacity. Additionally, delays would be added to the A2036 arm in both the AM and PM peaks and the Ravenside Retail Park access during the PM. Mitigation is likely to be required to accommodate both the isolated and the cumulative Local Plan growth.

Potential mitigation for the junction includes a flare capacity improvement on the A2036 and lane addition on the Retail Park access. This needs to be considered within the context of proposed bus priority measures at the junction and further investigation and local junction modelling would need to confirm the feasibility of these measures.

Site R8- A259 Glyne Gap Roundabout

Scheme Proposal: Increased flare capacity on A2036 and additional lane on Retail Park arm.

Impacts and Constraints:

- Five-arm roundabout which connects A259 Hastings Rd with A2036. Lewis Avenue and road leading to a retail park form the other two arms of this roundabout. The major flow directions are between A259 (SE) and A259 (W) and A2036 arms.
- Local Plan will add approximately 500 veh per hour during the peak periods, almost 18% increase from without LP scenario.
- In total, 2,600 veh per hour (two-way) are predicted along this section of the A259. Peak directional (WB) traffic around 1,700 veh per hour is predicted on the western arm of A259 and operates over to the threshold link capacity of 1,300-1,400 veh per hour for a single lane.
- High-level modelling shows, that maximum delays would generate on A2036 arm in both peaks and on Retail Park in the PM. Therefore, to mitigate such delays, physical improvement would be required. All other three arms would operate below its capacity.
- Potential mitigation measures include flare capacity improvement on the A2036 and lane addition at the Retail Park approach. Further investigation and local junction modelling would need to confirm the feasibility of these measures.

Opportunities:

- The existing roundabout with mitigations identified is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility study.
- Further consideration needed of potential bus priority measures and dedicated pedestrian and cycling crossing facilities.

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Figure 7-5 A259 Glyne Gap Roundabout concept review summary

7.3 A269 Corridor

The review of the (R12) A269/A2036 Hollier's Hill junction is summarised in

Site R12- A269/A2036 Hollier's Hill Junction

Scheme Proposal: Signalisation is to be considered further.

Impacts and Constraints:

- A priority T-Junction located on A269 that links Hazard's Green and Bexhill-on-Sea via the villages of Ninfield and Sidley.
- Most traffic is along A269; also, a high proportion of traffic is likely to be between A269 (N) and A2691 Wrestwood Road. Local plan to increase flows by 10-11% (around 280 veh per hour) during the peak periods.
- Local junction modelling indicates significant delays likely to generate on the A2036 Wrestwood Road minor arm.
- In previous studies conducted on behalf of ESCC, multiple mitigation options have been looked at, such as improved priority layout, normal or mini-roundabout and signalised junction.
- In Nov 2019 study, a signalised layout is preferred in providing adequate capacity. Due to bus stop relocation, and potential traffic cutting through the petrol pump issues, a decision has been made not to progress with this proposal.
- Further Countywide modelling needed to understand likely impacts at this junction

Opportunities:

- The potential for rearranging bus stops and changing petrol station access arrangement to implement signalised layout and linking with the Elva Way junction needs to be explored.
- Select Vehicle Detection (SVD) for the future to implement bus priority and Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.

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Figure 7-6. The main traffic flows are along the A269 and between the A269 north and A2691 Wrestwood Road. Local junction modelling indicates that the Local Plan growth is likely to introduce significant delays particularly on the A2036 Wrestwood Road minor arm.

Previous ESCC studies have investigated the implementation of signals at this location. However, the need to relocate the adjacent bus stop, and perceived potential for traffic to bypass the signals through the adjacent petrol station, a decision has been made not to progress with this proposal so far. Traffic levels will need to be tested further in the countywide model and further consideration of a signal option may be needed.

Site R12- A269/A2036 Hollier's Hill Junction

Scheme Proposal: Signalisation is to be considered further.

Impacts and Constraints:

- A priority T-Junction located on A269 that links Hazard's Green and Bexhill-on-Sea via the villages of Ninfield and Sidley.
- Most traffic is along A269; also, a high proportion of traffic is likely to be between A269 (N) and A2691 Wrestwood Road. Local plan to increase flows by 10-11% (around 280 veh per hour) during the peak periods.
- Local junction modelling indicates significant delays likely to generate on the A2036 Wrestwood Road minor arm.
- In previous studies conducted on behalf of ESCC, multiple mitigation options have been looked at, such as improved priority layout, normal or mini-roundabout and signalised junction.
- In Nov 2019 study, a signalised layout is preferred in providing adequate capacity. Due to bus stop relocation, and potential traffic cutting through the petrol pump issues, a decision has been made not to progress with this proposal.
- Further Countywide modelling needed to understand likely impacts at this junction

Opportunities:

- The potential for rearranging bus stops and changing petrol station access arrangement to implement signalised layout and linking with the Elva Way junction needs to be explored.
- Select Vehicle Detection (SVD) for the future to implement bus priority and Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.

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Figure 7-6 A269/A2036 Hollier's Hill Junction concept review summary

The review of the (R10) A269 / Turkey Road roundabout is summarised in Figure 7-7. With the increase in Local Plan traffic the existing roundabout is likely to operate within

capacity, except for the A269 northwest arm in the AM peak where there would be some delays that would require mitigation.

The current mini-roundabout layout does not have sufficient additional capacity to accommodate the future growth tested. The existing junction appears to have some land availability within the highway boundary that would offer an opportunity to provide additional capacity, particularly along the A269. It is suggested that the mitigation for this junction would be to add a flare lane on both A269 arms before considering changing the junction to a signalised layout to accommodate the additional traffic.

Site R10- A269/Turkey Road

Scheme Proposal: Addition of flare capacity on A269 approaches and thereafter potential signalisation of the existing mini-roundabout.

Impacts and Constraints:

- Local Plan will add approximately 220 veh per hour during the peak periods, almost 12% increase from the future base scenario.
- With the increase in LP flows the existing roundabout would likely operate within the capacity, except the A269 NW arm in the AM peak. There is a potential for some delays at this arm that would need further mitigation.
- Current mini-roundabout layout would not offer a significant spare capacity. The existing junction appears to have some land availability within the highway boundary that would offer some opportunities to provide additional capacity, particularly along the A269.
- Local widening of approach lanes would be beneficial based on further design and modelling studies, if found feasible and beneficial. Therefore it is suggested to consider adding a flare lane on both A269 arms before considering the junction to a signalised layout.
- The proposal to add flare lane capacity on the A269 approaches and further mitigation to a signalised junction is likely to cater for the Local Plan traffic flows increases.

Opportunities:

- The mitigation of adding capacity of the existing roundabout is expected to generally accommodate the forecast Rother Local Plan flows
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.

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Figure 7-7 A269/Turkey Road concept review summary

The review of the (R11) A269 / A2691 roundabout is summarised in Figure 7-8. The A2691 is a relatively new single carriageway road that connects the A2690 to the A269 for east-west traffic to bypass the north of Bexhill. The junction is expected to operate within capacity with the addition of the isolated and cumulative growth considered by this study and no mitigation is proposed at this stage. It should be noted that the existing layout does not provide any pedestrian/cyclist crossing points, which should be considered in the future.

Site R11- A269/A2691 Roundabout

Scheme Proposal: All arms would within capacity. No further improvement is required to current layout.

Impacts and Constraints:

- This three-arm roundabout is located on the western end of North Bexhill Access Road (A2691) connects with the A269. It is a newly constructed roundabout and does not cater to a significant traffic at the moment.
- The A2691 is a newly opened single carriageway road that connects the A2690 to the A269, bypassing the village of Sidley, providing a bypass for traffic in between A269 and A2690, leading to the A27 and Hastings.
- Most traffic through this junction is along with A269 SB to A2691. No link capacity issues are predicted along all the three arms of this roundabout of around 1,400 veh per hour.
- Local Plan will increase demand by 30% (370 veh per hour) during the peak periods.
- With predicted Isolated LP flows, minor delays are likely to generate on the A269 NW arm; but would operate significantly less than its saturation levels.
- All arms would operate with sufficient capacity to accommodate more growth in the future. Therefore, no mitigation is required to the current layout.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan and Cumulative Local Plan flows.
- Proposed layout does not include any dedicated crossing for pedestrians and cyclists, which should be explored in the future.

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Figure 7-8 A269/A2691 Roundabout concept review summary

7.4 A2691 / A2690 Corridor

The A2691/A2690 Roundabout is a four-arm roundabout located on the North Bexhill Access Road and Combe Valley Way (Bexhill-Hastings Link Road). The Local Plan scenario will increase demand by approximately 7-8% during the peak periods, with the largest increases being on the A2690. With the relatively low predicted flows in the isolated Local Plan scenario only small delays are expected on the northern arm of the A2690, which would mean that this arm would operate close to capacity and no mitigation is proposed at this stage.

Site R9- A2691/A2690 Roundabout

Scheme Proposal: All arms would operate less than it threshold capacity. No further improvement is required to current layout.

Impacts and Constraints:

- This four-arm roundabout is located on the North Bexhill Access Road and Combe Valley Way (also known as the Bexhill-Hastings Link Road). It is a newly constructed roundabout and currently does not cater to high volume of traffic.
- The A2691 is a newly opened single carriageway road that connects the A2690 to the A269, bypassing the village of Sidley.
- Most traffic through this junction is along with A2690 SB (around 1,550 veh per hour). therefore, the link is forecasted to operate over its peak directional capacity of around 1,400 veh per hour.
- Local Plan will increase demand by a moderate 7-8% (260-280 veh per hour) during the peak periods, most of around increase would be along A2690.
- With predicted Isolated LP flows, moderate delays are likely to generate on the northern arm of A2690; and would operate close to its saturation levels, but not likely to exceed.
- All other three arms would operate with sufficient capacity available to accommodate more growth in the future. Therefore, no mitigation is required to the current layout.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows.
- Proposed layout does not include any dedicated crossing for NMU's, particularly cyclists, which should be explored in the future.

Figure 7-9 A2691/A2690 Roundabout concept review summary

7.5 A21 SRN Corridor

The review of the A21 / A268 / B2087 junction is summarised in Figure 7-10. The junction is signalised and connects the A268 Hawkhurst Road with the A21 SRN corridor and providing access to Flimwell High Street. The potential Local Plan growth is expected to increase demand on the A21 and A268 Hawkhurst Road and the initial assessment indicates there would be future delays in both peaks on these arms. The junction could require an additional right turn lane to increase the capacity on both A21 approaches and increased flare on the A268 arm.

Site R2- A268/B2087/A21 Signalised Junction

Scheme Proposal: Improve signalised layout to include additional ahead lane on A21 approaches with extension to right turn capacity.

Impacts and Constraints:

- Four-arm signalised junction connects A268 Hawkhurst Road with the A21 corridor, also provides access to Flimwell High Street. Most of the LP flows are expected to be along the A21 corridor and A268 Hawkhurst Road.
- Local Plan will add approximately 250 veh per hour during the peak periods, almost 15% increase from without LP scenario.
- Peak directional traffic of around 1,390 veh per hour is predicted on the northern arm of A21 and operates at its threshold link capacity of a single lane that is 1,300-1,400 veh per hour. The other three arms are expected to witness lower traffic levels, therefore not likely to face any major link delays.
- High-level modelling shows, that delays would generate in both peaks on A21 (both SB and NB) and A268 arm, and would operate almost 20-25% over its saturation levels.
- In future, junction would need some physical improvement, including additional ahead lane and increased right turn lane capacity on both A21 approaches and also a flare lane addition on A268 arm.

Opportunities:

- Improvement to the signalised layout is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility study.
- Select Vehicle Detection (SVD) for the future to implement bus priority measures

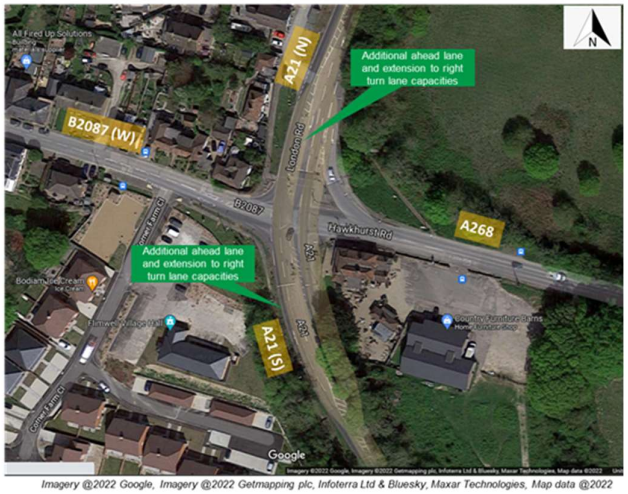


Figure 7-10 A268/B2087/A21 Signalised Junction concept review summary

The A21 / A229 Cooper's Corner junction (review summary in Figure 7-11) will see an increase in up to 300 vehicles per hour during the peak periods along the A259 with the Local Plan growth. It is expected that the A21 link will exceed capacity but will not cause significant delays. A mitigation proposal could be to convert the junction into a standard roundabout, if the minor road flows support this option. This would be subject to further feasibility and local junction modelling.

Site R24- A21/A229 Cooper's Corner

Scheme Proposal: Convert existing priority T-junction to a standard roundabout layout.

Impacts and Constraints:

- A229 forms a minor arm of this A21 priority T-junction. Local Plan will increase demand along A21 by around 300 veh per hour during the peak periods.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected around 1,200-1,400 veh per hour. Therefore, the link capacity predicted for A21 along this junction will exceed the capacity but will not likely cause significant delays.
- In total, traffic exceeding 2,300 veh per hour (two-way) likely to use this section of the A21. Therefore, it would cause delays for A229 traffic (subjected to traffic prediction) to find gaps in the major road movements.
- The junction is located in a semi-rural environment, potentially where land for junction improvement can be available. The mitigation proposal would be to convert into a standard roundabout, if minor road flows support this option. This is also subject to further feasibility and local junction modelling.

Opportunities:

- Converting existing priority junction to a roundabout is expected to generally accommodate the forecast Rother Local Plan flows.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-11 A21/A229 Cooper's Corner concept review summary

The potential growth tested will increase demand along A259 at the A265 / A21 junction (review summary in Figure 7-12). The A21 northern arm is expected to have the highest peak hour demand with an additional 1,450 vehicles per hour (southbound movement during the PM peak scenario). The A21 link is expected to exceed its capacity slightly but will not result in significant delays. Due to the high main movement along the A21, it is likely to cause delays and difficulty for A265 traffic to find gaps in the A21 through movements. The mitigation proposed could be to signalise this junction, subject to further feasibility and local junction modelling.

Site R15- A265/A21 Priority T-Junction

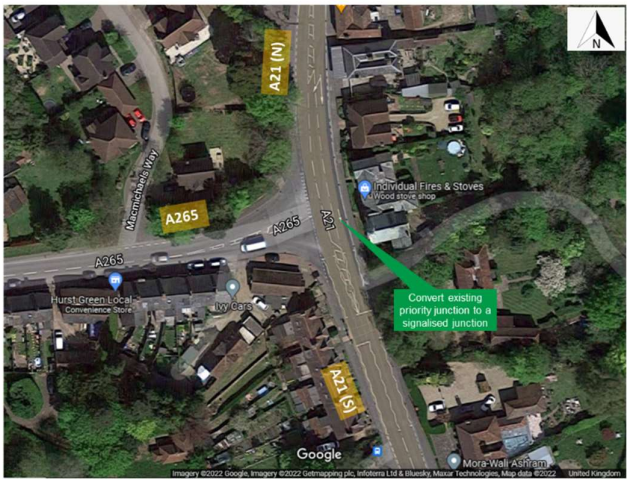
Scheme Proposal: Convert existing priority T-junction to a roundabout or a signalised layout.

Impacts and Constraints:

- A265 forms a minor arm of this A21 priority T-junction at Hurst Green. Local Plan will increase demand along A259 by around 320-350 veh per hour during the peak periods, an almost 16% increase from the future base scenario.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected to be highest, around 1,450 veh per hour predicted as SB movement in the PM peak scenario. Therefore, the link capacity predicted for A21 along this junction is expected to exceed its capacity slightly but is not likely to cause significant delays.
- In total, 2,300 veh per hour (two-way) are predicted along this section of the A21. Therefore, it would be cause delays for A265 traffic (more than 300 veh per hour) to find gaps in the A21 through movements.
- Since the junction is located in a built environment with limited highway land available, the mitigation proposal would be to convert into a signalised T-junction, subject to further feasibility and local junction modelling.

Opportunities:

- Converting existing priority junction to a signalised layout expected to generally accommodate the forecast Rother Local Plan flows.
- Select Vehicle Detection (SVD) for the future to implement bus priority measures.
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.



Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-12 A265/A21 Priority T-Junction concept review summary

The A21 Silver Hill Junction (review summary in Figure 7-13) is expected to have an increase in demand along the A259 by around 300 vehicles per hour during the peak periods. The link capacity for the A21 at this junction will exceed the capacity but is not anticipated to cause significant delays. It is likely that there would be delays to traffic turning from Bodiam Road to the A21 due to the forecast flow levels on the major road.

The potential mitigation proposed for this junction could be to convert it into a standard roundabout if the increase in traffic from Bodiam Road is significant. If land availability and road alignment are an issue, the alternative would be to convert the junction into a signalised layout. This would be subject to further feasibility and local junction modelling.

Site R23- A21_Silver Hill Junction

Scheme Proposal: Convert existing priority T-junction to a roundabout or a signalised layout.

Impacts and Constraints:

- Bodiam Road forms a minor arm of this A21 priority T-junction At Silver Hill. Local Plan will increase demand along A259 by around 300 veh per hour during the peak periods.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected around 1,200-1,400 veh per hour. Therefore, the link capacity predicted for A21 along this junction will exceed the capacity but will not likely cause significant delays.
- In total, traffic exceeding 2,300 veh per hour (two-way) likely to use this section of the A21. Therefore, it would cause delays for Bodiam Road traffic (subjected to traffic prediction) to find gaps in the major road movements.
- The junction is located in a semi-rural environment, potentially where land for junction improvement can be available to support if any local road alignment is needed.
- The potential mitigation proposal would be to convert into a standard roundabout if minor road flows warrant this option. This is also subject to further feasibility and local junction modelling.
- If land availability and road alignment become an issue, the alternative would be convert into a signalised layout.

Opportunities:

- Converting existing priority junction to a roundabout or a signalised junction is expected to generally accommodate the forecast Rother Local Plan flows.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-13 A21 Silver Hill Junction concept review summary

The existing A21 Northbridge Street Roundabout (review summary in Figure 7-14) does not generate significant delays along the A21 due to the large diameter of the roundabout. The Local Plan flow increases are not anticipated to significantly impact on the operation of this junction, and mitigation is unlikely to be required at this stage, subject to further traffic forecasting and local junction modelling.

Site R25- A21 Northbridge Street Roundabout

Scheme Proposal: No immediate mitigation identified at this stage. Potential mitigations would be capacity improvement to flared lanes on A21, and Church Lane approaches.

Impacts and Constraints:

- Existing roundabout has an inscribed circle diameter greater than 40m, and is likely to provide moderate capacity. The existing layout does not generate significant delays along the A21 at the moment .
- All four approaches have a two-lane approach, with longer flared lanes on the A21 approaches.
- It is likely that Northbridge St might experience some delays while giving priority to NB circulating traffic from A21 (S) in both peak periods.
- It is not likely that predicted LP flows increases would significanty impact this junction and the approaching link's capacity. However, this is subjected to further traffic forecasting and local junction modelling.
- No immediate mitigations identified at this stage.
- However, there are potential mitigations options available, which could include addition of capacity to flare lanes at both A21 and Church Lane (west) approaches. The provision of further capacity on the Northbridge Street can be relatively challenging, due to land availability constraints.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows. There are options available to provide further improvement in capacity, if needed.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-14 A21 Northbridge Street Roundabout concept review summary

The A21 Johns Cross Roundabout (review summary in Figure 7-15

Site R22- A21 Johns Cross Roundabout

Scheme Proposal: No immediate mitigation identified at this stage. Potential mitigation identified would be an addition of flare lanes on A21 (W) and A2100 London Road approaches.

Impacts and Constraints:

- Existing roundabout has approx. 60m inscribed circle diameter, therefore likely to provide adequate capacity and does not experience significant delays on A21 approaches at the moment.
- The northern approach of A21 does have two lanes at the give-way approach. However, A21 Vinehall Road (west) and A2100 London Road (south) only have a single lane approach.
- It is likely that A2100 London Road might experience some delays while giving priority to NB circulating traffic from A21 (W) in the AM peak.
- It is not likely that predicted LP flows increases would significantly impact this junction and the approaching link's capacity. However, this is subjected to further traffic forecasting and local junction modelling.
- No immediate mitigation is identified at this stage.
- However, there are potential mitigations options available, which could include the addition of a lane at the A21 Vinehall Road (west) and A2100 London Road (south) approaches.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows. There are options available to provide further improvement in capacity if needed.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-15) has a large diameter (approximately 60m) and at present there are no significant delays on the A21 approaches. The northern approach of A21 has two lanes at the give-way approach. However, A21 Vinehall Road (west) and A2100 London Road (south) are only single lane approaches.

It is unlikely that predicted Local Plan flow growth would significantly impact this junction. It is anticipated that the A2100 London Road might experience some delays while giving priority to northbound circulating traffic from the A21 (W) in the AM peak. Mitigation is unlikely to be needed at this stage to accommodate the Local Plan growth, subject to further modelling. If mitigation is needed, the addition of a lane to the A21 Vinehall Road (W) and A2100 London Road (S) approaches could provide further capacity.

Site R22- A21 Johns Cross Roundabout

Scheme Proposal: No immediate mitigation identified at this stage. Potential mitigation identified would be an addition of flare lanes on A21 (W) and A2100 London Road approaches.

Impacts and Constraints:

- Existing roundabout has approx. 60m inscribed circle diameter, therefore likely to provide adequate capacity and does not experience significant delays on A21 approaches at the moment.
- The northern approach of A21 does have two lanes at the give-way approach. However, A21 Vinehall Road (west) and A2100 London Road (south) only have a single lane approach.
- It is likely that A2100 London Road might experience some delays while giving priority to NB circulating traffic from A21 (W) in the AM peak.
- It is not likely that predicted LP flows increases would significantly impact this junction and the approaching link's capacity. However, this is subjected to further traffic forecasting and local junction modelling.
- No immediate mitigation is identified at this stage.
- However, there are potential mitigations options available, which could include the addition of a lane at the A21 Vinehall Road (west) and A2100 London Road (south) approaches.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows. There are options available to provide further improvement in capacity if needed.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Figure 7-15 A21 Johns Cross Roundabout concept review summary

7.6 Wider Mitigation

The impacts of wider additional cross-boundary Local Plan growth, from other districts, on the Rother network will need to be considered within the context of the eventual

need for mitigation. Equally, the cross-boundary impacts of the Rother Local Plan will need to be considered too.

The key cross-boundary impacts of the potential Rother Local Plan growth distribution have been assessed and the greatest impacts will be towards Wealden with additional two-way peak hour flows of up to 430 vehicles on the A259 and 240 vehicles on the A269 corridors leading west towards Pevensey and Hailsham. These cross-boundary traffic flows are likely to impact a number of key junctions on the A259 in Wealden including Pevensey roundabout and the B2095/A259 junction. The Rother development traffic also has a high impact on the peak hour flows in some areas of Kent. There is an addition of up to 375 two-way flows on the A21 corridor leading north through Flimwell towards Tonbridge. Further consideration will need to be given to any cross-boundary impacts as the development growth options evolve and are tested in the countywide model.

7.7 Summary

The high-level outcomes of the initial highway mitigation concept review are summarised in Table 7-2. Generally, reasonable local improvements could be implemented to improve capacity at a junction level at least. However, junction capacity is not the overriding constraining factor and the STEB model has identified that the key A259 and A21 could exceed link capacity, which would reduce the effectiveness of any junction improvements. The limitations of STEB need to be acknowledged and the potential for reassignment across less congested parts of the network will need to be explored as part of the next stage of assessment in the countywide model.

All designs are subject to more detailed feasibility, land availability and junction modelling and further consideration will be needed to explore the full potential for active modes and bus priority to support the sustainable mode shift needed to mitigate the Local Plan.

Table 7-2 Summary of concept review options

Junction	Ref	Corridor	Mitigation Summary
A259/B2182/Peartree Lane (Little Common Rbt)	R1	A259	Convert the existing roundabout to a signalised junction ▪ A259 could still exceed link capacity ▪ Potential design challenges with number of arms, available land and proximity of war memorial, which could restrict any scheme
A259/West Down Road	R3	A259	Converted priority junction to a roundabout or a signalised junction.
A259/A269	R4	A259	Former High School Site Development to provide mitigation at this junction. Additional mitigation, such as changing pedestrian crossing arrangements to decrease the lost time in signal operation and additional right turn lane capacity on main approaches is recommended. ▪ A259 could still exceed link capacity ▪ Potential need for third-party land take
A259/A269/Dorset Road	R7	A259	Mitigation unlikely to be required beyond adjustment to signal timings ▪ A259 could still exceed link capacity
Glyne Gap RBT	R8	A259	Increased flare capacity on A2036 and additional lane on Retail Park arm.
A2691/A2690 roundabout	R9	A2691/A2690	No mitigation is required to accommodate the Local Plan growth.

Junction	Ref	Corridor	Mitigation Summary
A269/A2036	R12	A269/A2036	Traffic signals to be considered further ▪ Potential design challenges to implementing, including bus stop and petrol station access
A269/Turkey Road	R10	A269	No immediate mitigations required at this stage Potential mitigation identified for the future would be the addition of flare capacity on A269 approaches and thereafter potential signalisation of the existing mini-roundabout.
A269/A2691 roundabout	R11	A269/A2691	No mitigation is required to accommodate the Local Plan growth.
B2087/A21	R2	A21	In the future, the junction would require additional right turn lane to increase the capacity on both A21 approaches and flare lane addition on A268 arm.
Cooper's Corner	R24	A21	Convert existing priority T-junction to a standard roundabout layout.
A265/A21	R15	A21/A265	Convert existing priority T-junction to a roundabout or a signalised layout.
Silver Hill	R23	A21	Convert existing priority T-junction to a roundabout or a signalised layout.
Northbridge Street	R25	A21	No immediate mitigation required at this stage. Potential mitigations to consider in the future would be capacity improvement to flared lanes on A21, and Church Lane approaches.
John's Cross	R22	A21	No immediate mitigation required at this stage. Potential mitigation identified for the future would be an addition of flare lanes on A21 (W) and A2100 London Road approaches.

8 Summary and Next Steps

8.1 Impacts of potential Local Plan growth in Rother

Rother District Council (RDC) is preparing a new Local Plan as a framework for future development up to 2039. An initial assessment has been undertaken of a potential growth distribution, consisting largely of sites submitted through the 'Call for Sites' consultation, with the key objectives to understand:

- The likely high-level transport impacts of potential growth
- Early mitigation solutions to address additional transport challenges
- Potential residual risks to the transport network from Local Plan growth across the district and wider region

The assessment approach aligns with wider guidance, and the Council's own proposed vision and objectives, to place sustainable transport at the centre of any mitigation solutions and move away from traditional 'predict and provide' towards a preferred 'decide and provide' future, which aims to reduce reliance on a car dependant transport system.

The largely rural district faces a number of transport-based challenges around car ownership, car dependency and congestion on key corridors. Connectivity to rural settlements, away from the coastal areas and Bexhill town centre, by public transport is limited and there is a high level of car-based movement, within the district and towards Wealden, Eastbourne and Hastings.

The assessment identifies that, without mitigation, the potential level of traffic growth tested could have some severe impacts on the district transport network, including the following observations:

- Scale of new development assessed is likely to change and subject to further option testing
- Potentially generates up to 4,000 additional development related vehicle trips in the peak hour
- Impacts and potential capacity issues on links and junctions on key A259, A21, A269 and A2690 corridors with potential need for mitigation

8.2 Initial mitigation options

Wider evidence has been considered to identify an initial framework of sustainable interventions, to build on the existing scheme pipeline, TfSE draft Strategic Investment Plan (SIP) and potential targets for modal shift and a reduction in car use in Rother, including:

- Enhanced partnerships with operators and develop the evidence for zero emission bus-based rapid transit (BRT) on key corridors and connecting key destinations

- Develop the evidence for a network of public transport, active mode and micro-mobility solutions to provide alternative seamless travel routes to the key highway corridors and desire lines in urban areas
- Consideration of digital demand responsive transport (DDRT) options to complement fixed bus services and better connect rural areas with key towns and rail interchange
- Reduction in car ownership, parking demand and car use in the town centre and surrounding area, where supported by good access to public transport and active travel networks
- Progressive adoption of innovative technologies

At this early stage, an average sustainable travel target of a 5%-10% reduction in forecast peak hour car trips has been applied to rural and urban areas to reflect the respective potential for sustainable access. While this will need refining as the Local Plan option and assessment evolves, with more certainty of the package of measures to be delivered, there are still some residual impacts on the A259, A21 and local junction 'hotspots', which could pose a potential risk to the delivery of the eventual Local Plan option. Key considerations to be taken forward for further testing, and also complement, the proposed package of measures could include:

- Further option testing of different levels and distribution of development in locations with the greatest opportunity for sustainable access
- Early development of design codes, road user hierarchy and infrastructure requirements to 'plan for people & places'
- Review where car free and reduced parking developments could be delivered
- Continued engagement with ESCC, operators and TfSE to explore and maximise the potential of enhanced bus partnerships and the role BRT or DDRT could play
- Planning obligation and CIL strategy, to complement strategic funding opportunities, and contribute to a range of 'Sustainable Travel Town' initiatives
- Explore and embrace a range of emerging technologies and future mobility opportunities to support sustainable and less traditional travel alternatives
- Can a greater level of modal shift, than the average 5%-10% assessed, be achieved on some key corridors with the introduction of BRT or in rural areas with DDRT and other measures

8.3 Potential cross-boundary impacts

A cumulative assessment of neighbouring Local Plan growth also illustrates that potential additional cross boundary Local Plan growth could add further traffic impacts, particularly on the A259 and A21 corridors. Similarly, the potential Rother Local Plan growth will impact on key corridors in neighbouring Wealden, Hastings and towards Kent.

Further consideration will need to be given going forward to how these additional impacts are treated within the context of the eventual Rother Local Plan, and what it is expected to mitigate, noting that this is also an emerging picture and subject to change.

8.4 Next steps

At this stage, the initial STEB spreadsheet-based modelling has shown that the initial Rother growth option tested could generally be accommodated with a combination of sustainable modal shift and local highway improvements. However, the STEB modelling does highlight that the key A259 corridor could be significantly constrained, and, to a lesser extent, the A21, A269 and A2690 could be nearing capacity during the peak periods, even with the target level of modal shift applied. The countywide model will need to be used to test these corridors in more detail, including reassignment of traffic and whether a greater level of modal shift can be achieved, to confirm the eventual likely level of impact. It is anticipated that the Council will undertake further testing of alternative spatial options and additional mitigation solutions may need further consideration.

The SATURN-based strategic East Sussex Countywide Transport Model (ESCWTM / "countywide model") will be used to refine the modelling methodology, assess impacts in more detail and further develop the transport evidence base as the Local Plan is developed further. The key analysis to be considered going forward is likely to include, but not be limited to, the following:

- Development of initial framework of sustainable options into an integrated delivery strategy across different interventions to drive behaviour change including, place-making, public transport, cycling, walking, electric vehicles and future mobility
- Updated origin and destination information using mobile phone data rather than historic Census 2011 data
- Full dynamic reassignment to balance demand across a number of feasible routes based on available capacity, travel time, congestion and generalised cost variables
- Consideration of a range of journey purposes, and not just travel to work, to refine trip distribution patterns and understand the impacts of both shorter and longer distance trips
- Further refinement of specific land use trip rates including any potential for car free development and sustainable travel options
- Continue to develop evidence and assess corridor specific modal shift accounting for full range of sustainable options including BRT, bus, rail, walking, cycling and other transport options
- Further testing of cumulative and cross boundary impacts of all Local Plan growth on the transport network within Rother and in neighbouring districts
- Sensitivity testing and design of potential highway interventions and junction improvements
- Additional option testing of alternative spatial strategies, including any outcomes from ongoing West Bexhill multi-modal corridor study

A key consideration going forward is that the Local Plan is being assessed against forecast traffic patterns some 15+ years in the future and there are uncertainties around key external drivers of travel behaviour, including net-zero carbon, technological changes, fuel prices, new ways of working and global events, which could fundamentally change the predicted outcomes. A proportionate, flexible, monitor and manage approach to delivering specific measures and outcomes, is therefore needed, which can respond to these changes.

Appendices

Appendix A: Known Scheme Pipeline

Scheme Number	Scheme name	Description
Committed		
1	A259/A269 London Road junction	Signal retiming
2	A259 Little Common Road junction	Improved entry and roundabout markings
3	Bexhill Road, Hastings	"The introduction of bus priority measures on Bexhill Road in Hastings was a condition of the DfT funding for the Bexhill Hastings Link Road.
4	Bexhill Bus Stop Improvements	The bus priority measures on Bexhill Road between Glyne Gap and Filsham Road was split into three phases. The first, focussed on the central section from east of Glyne Gap to Harley Shute Road, was completed in 2018.
Concept		
5	A259/A2036 Glyne Gap roundabout	• Small scale local widening to improve capacity • Slight improvement to the A2036 arm to improve capacity - identified through' previous Rother Local Plan modelling
6	A269/A2036 (Holliers Hill)	Partial signalisation considered - concluded no workable solution identified
7	Hastings - Bexhill Rapid transit	
8	Marshlink High speed services Partial	• New hourly service from Eastbourne, Bexhill, Hastings to London St Pancras throughout day • Dedicated train in the peak, joins Dover train in the off-peak • 19-minute journey time saving for Hastings direct train to London (7 minutes in off-peak) • 35-minute journey time saving for Bexhill direct train to London
9	Marshlink High speed services Full	• A259 diverted, upgrade of some crossings, some foot crossings closed & diverted • Upgrade between Bexhill and Hampden Park to reduce journey times • New hourly service from Eastbourne, Bexhill, Hastings to London St Pancras throughout day • Dedicated train in the peak, joins Dover train in the off-peak • 29-minute journey time saving for Hastings direct train to London (17 minutes in off-peak) • 45-minute journey time saving for Bexhill direct train to London

Appendix B: LCWIP Schemes

Scheme Proposal
Cycling Schemes
Bexhill
B1 - NCN2
B2 - Cooden Beach, Collington, Craunston Avenue, Windsor Road
B3 - Withyham Road, Little Common, Recreation Ground
B4 - Cooden Sea Road, Broadoak Lane, Woodsgate Park
B5 - NCN2/West Parade, King Offa Primary NBDA West
B6 - Collington Rail Station - Hastings Direct
B7 - Bancroft, Hillside Bankside
B8 - Bexhill Railway Station to Little Common Road
B9 - Bexhill Hospital, Gunters Lane
B10 - Gunters Lane, Highlands
B11 - Norfolk Close, NBDA
B12 - Gunters Lane - Sidley
B13 - Buckholt Lane - NBDA
B14 - NCN2/De La Warr Parade, King Offa Way & NBDA Central
B15 - NCN2/De La Warr Parade & NBDA Central
B16 - NCN2/De La Warr Parade NBDA East and Central
B17 - Retail Park, Pebsham Lane, NBDA East & Central
B18 - NCN2/De La Warr Parade, King Offa Way & NBDA Central
B19 - NCN2/De La Warr Parade NBDA East & Central
B20 - NCN2/De La Warr Parade NBDA East & Central
B21 - Retail Park, Pebsham Lane, NBDA East & Central
B22 - NCN2/De La Warr Parade, King Offa Way & NBDA Central
B23 - Bexhill - Hastings Greenway (Coombe Valley Way)
Battle
Ba1/Ba2 - Battle Schools Greenway
Ba3 - Uckham Lane, Marley Lane, Great Wood
Ba4/Ba7/Ba8/Ba9 - Links to Blackfriars Re-development
Ba5 - Battle North
Ba6 - Link Automotive Estates
Rye
R1 - Rye - Rye Harbour - Winchelsea Loop
R2 - Valley Park - Rock Channel
R3 - Valley Park - Camber - Jury's Gap

R4 - Peasmarsh - Military Road
R5 - Playden Lane
R6 - School Lane
R7 - Peasmarsh – Landgate
R8 - Rye Harbour Alternative
R9 - Winchelsea Road - Harbour Road
R10 - Camber Alternative
R11 - Mason Road
R12 - Ferry Road - Love Lane
R13 - Cinque Ports Street – Winchelsea
R14 - Rye – Playden
R15 - Military Road
R16 - Rye - Iden Lock
R17 - New Road - Scots Float Sluice
R18 - Rock Channel
Bexhill Walking Schemes
B1 - Core Walking Zone
B2 - Cooden Sea Road to Freshfields
B3 - Station Road to Barnhorn Road
B4 - Buckhurst Place to Turkey Road
B5 - Sea Road to Watermill Lane
B6 - Upper Sea Road to Pebsham Lane

Appendix C: STEB Limitations & Assumptions

Limitation	Assumption
Trip Distribution	Based on 2011 Census JTW at MSOA level and will potentially differ from the countywide model. JTW trips doesn't capture employer business / education / leisure / shopping, however, for cumulative assessments NTS trip purpose proportions were applied to cross boundary trips **only**. Based on the NTS data, a discount of 34% and 10% was applied as a proxy for education trips in the AM and PM respectively. In addition, a discount of 2% and 12% was applied as a proxy for shopping trips in the AM and PM peak.
Zoning and network detail	Highway network includes a simplified road hierarchy structure with network imported from ITN 2019. Also, for LP assessments no future committed transport infrastructure was included. Junctions were not coded in detail therefore delay from junctions are not captured. For zones, up to three connectors were coded to provide access to the nearest highway network.
Traffic Assignment	Traffic assignment was based on a simplified road hierarchy structure with free flow speed taken into account. There is no capacity constraint in the model and therefore there is no impact on route choice.
Trip Pairing	Considers all LP employment trips as new i.e. does not factor in LP resi/emp trip pairing, nor displacement, erosion, relocation and conversion of existing employment sites (some of which will become new LP residential e.g. office to flats)
Secondary trips - retail uses	Limited retail included in current option and no secondary trip factors for pass-by or linked trips applied at this stage
Car Free Residential Development	This has not been explicitly modelled at this stage, but will contribute towards overarching modal shift assumptions. Further assessments can be undertaken when specific sites are identified.
Windfall housing sites	Distribution and location based on historic trends and consolidated into geographical clusters with notional highway connections for modelling purposes.
Existing traffic data	Existing traffic data, where available was used, but new data was not collected due to COVID limitations. It is anticipated that the countywide model will fill the gaps once made available.

Appendix D: Land use trip rates

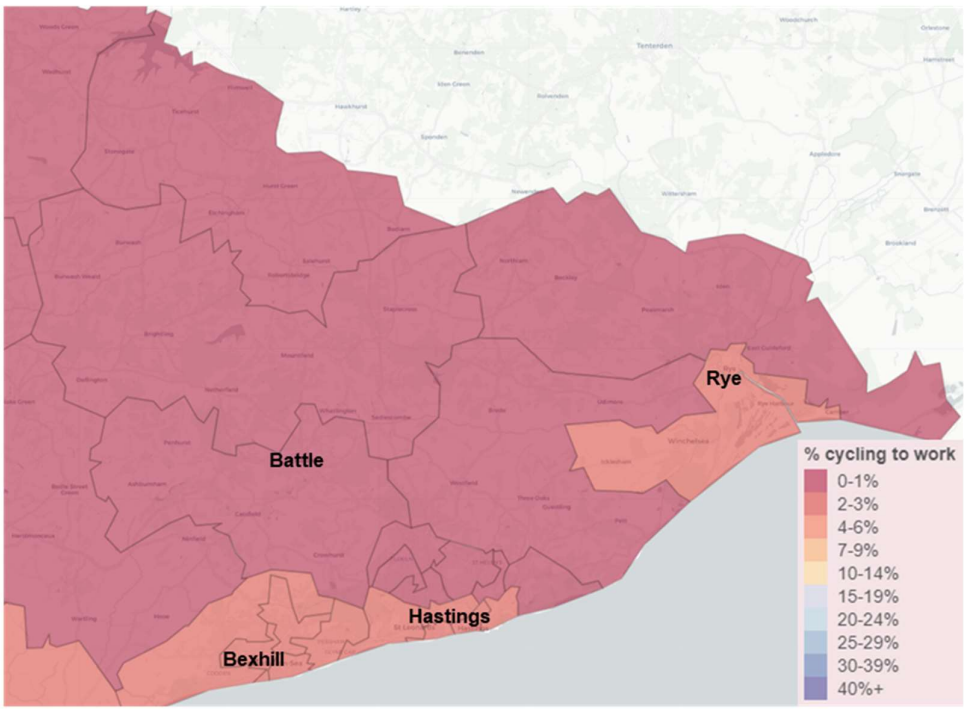
Vehicle class	Type of development	Development location	AM Origin	AM Destination	PM Origin	PM Destination	Trip Rate Parameter	Comment
Total Veh.	Residential	Town Centre	0.20000	0.02500	0.07500	0.25000	per dwelling	
Total Veh.	Residential	Neighbourhood Centre	0.32300	0.10400	0.12500	0.31100	per dwelling	
Total Veh.	Residential	Suburban Area	0.40100	0.11800	0.18300	0.37000	per dwelling	
Total Veh.	Residential	Edge of Town	0.36600	0.13500	0.15100	0.33300	per dwelling	
Total Veh.	Residential	Edge of Town Centre	0.30400	0.14600	0.18500	0.24300	per dwelling	
Total Veh.	Residential	Free Standing	0.36100	0.15300	0.18100	0.40300	per dwelling	
Total Veh.	Retail	Town Centre	0.02539	0.03057	0.04286	0.04704	per 1sqm	
Total Veh.	Retail	Neighbourhood Centre	0.01527	0.02134	0.04707	0.04728	per 1sqm	
Total Veh.	Retail	Suburban Area	0.01445	0.02028	0.03539	0.02973	per 1sqm	
Total Veh.	Retail	Edge of Town	0.01923	0.02279	0.03611	0.03233	per 1sqm	
Total Veh.	Retail	Edge of Town Centre	0.02306	0.02569	0.06403	0.05736	per 1sqm	
Total Veh.	Retail	Free Standing	0.00000	0.00000	0.00000	0.00000	per 1sqm	
Total Veh.	Office	Town Centre	0.00117	0.01628	0.01351	0.00080	per 1sqm	
Total Veh.	Office	Neighbourhood Centre	0.00091	0.01260	0.01340	0.00047	per 1sqm	Copied from edge of town
Total Veh.	Office	Suburban Area	0.00185	0.01292	0.01041	0.00145	per 1sqm	
Total Veh.	Office	Edge of Town	0.00091	0.01260	0.01340	0.00047	per 1sqm	
Total Veh.	Office	Edge of Town Centre	0.00234	0.01810	0.01634	0.00220	per 1sqm	
Total Veh.	Office	Free Standing	0.00091	0.01260	0.01340	0.00047	per 1sqm	Copied from edge of town
Total Veh.	Industrial	Town Centre	0.00000	0.00000	0.00000	0.00000	per 1sqm	
Total Veh.	Industrial	Neighbourhood Centre	0.00208	0.00634	0.00660	0.00184	per 1sqm	Copied from edge of town
Total Veh.	Industrial	Suburban Area	0.00171	0.00403	0.00280	0.00105	per 1sqm	
Total Veh.	Industrial	Edge of Town	0.00208	0.00634	0.00660	0.00184	per 1sqm	
Total Veh.	Industrial	Edge of Town Centre	0.00071	0.00128	0.00185	0.00199	per 1sqm	
Total Veh.	Industrial	Free Standing	0.00017	0.00217	0.00200	0.00025	per 1sqm	
Total Veh.	Warehouse	Town Centre	0.00000	0.00000	0.00000	0.00000	per 1sqm	
Total Veh.	Warehouse	Neighbourhood Centre	0.00061	0.00320	0.00244	0.00015	per 1sqm	Copied from edge of town
Total Veh.	Warehouse	Suburban Area	0.00000	0.00000	0.00000	0.00000	per 1sqm	
Total Veh.	Warehouse	Edge of Town	0.00061	0.00320	0.00244	0.00015	per 1sqm	
Total Veh.	Warehouse	Edge of Town Centre	0.00000	0.00000	0.00000	0.00000	per 1sqm	
Total Veh.	Warehouse	Free Standing	0.00044	0.00112	0.00070	0.00016	per 1sqm	
Total Veh.	Leisure	Town Centre	0.00276	0.00310	0.01759	0.01310	per 1sqm	
Total Veh.	Leisure	Neighbourhood Centre	0.00050	0.00075	0.00000	0.00000	per 1sqm	
Total Veh.	Leisure	Suburban Area	0.00020	0.00030	0.00050	0.00076	per 1sqm	
Total Veh.	Leisure	Edge of Town	0.00052	0.00076	0.00172	0.00187	per 1sqm	
Total Veh.	Leisure	Edge of Town Centre	0.00077	0.00092	0.00240	0.00265	per 1sqm	
Total Veh.	Leisure	Free Standing	0.00052	0.00076	0.00172	0.00187	per 1sqm	Copied from edge of town

Source TRICS ® v7.8.1 - data extracted 2021

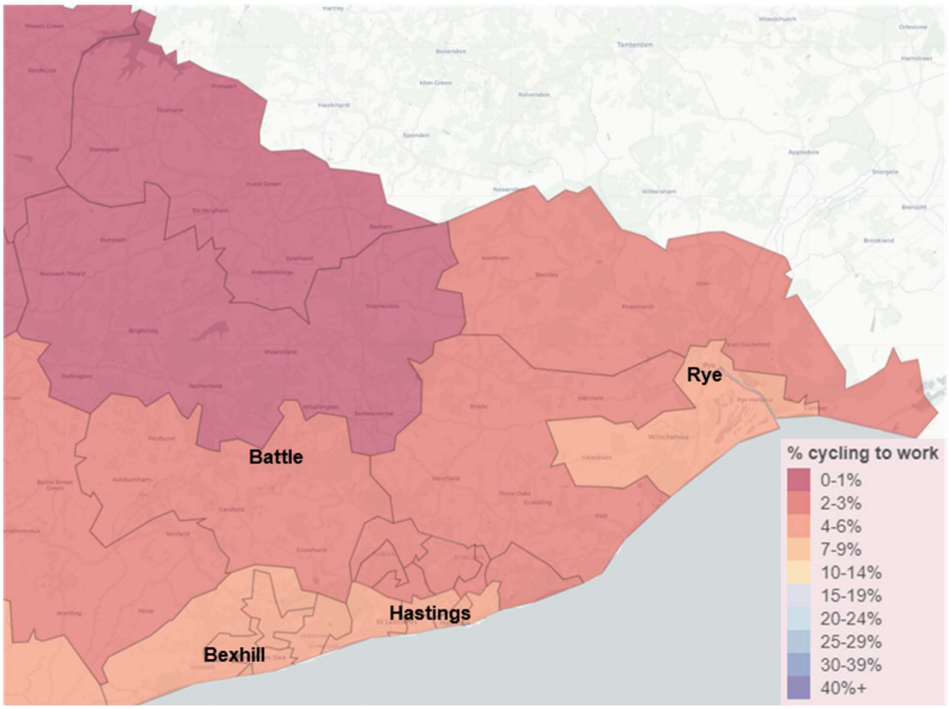
Appendix E: Propensity to Cycle Tool – Rother Scenarios

Source: DfT Propensity to Cycle Tool (PCT[29]) – date May 2022

Census 2011

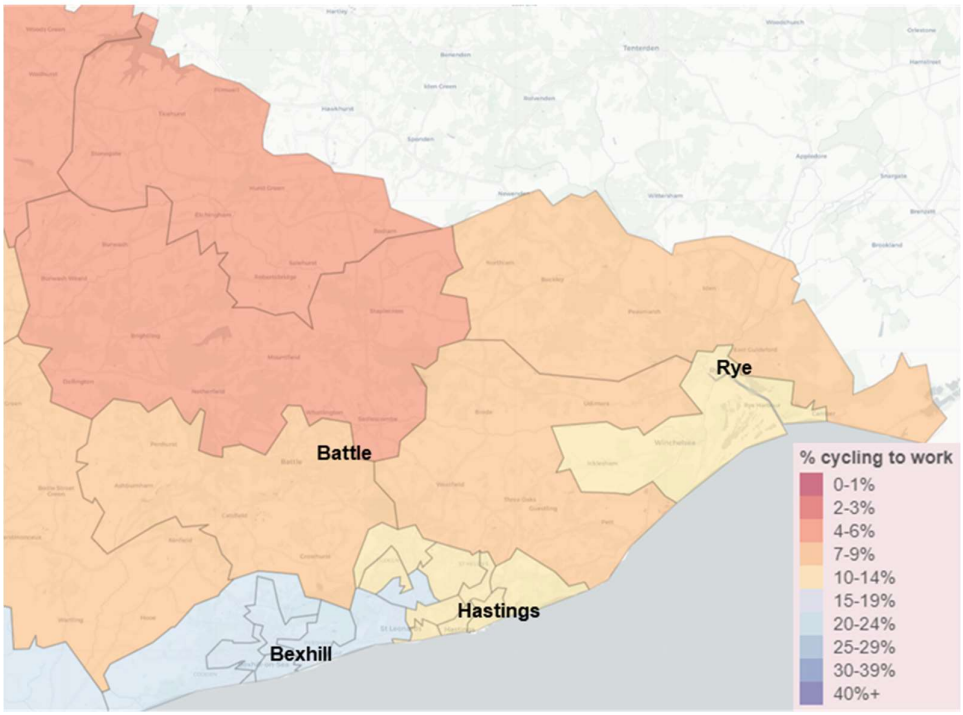


Government Target

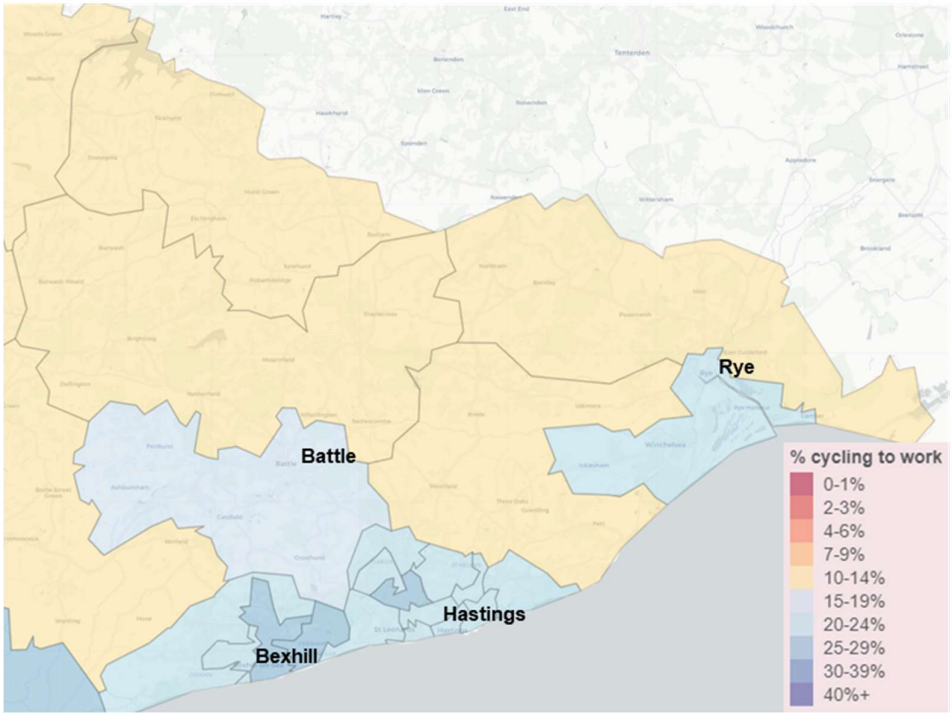


29 www.pct.bike

‘Go Dutch’



E-Bikes



Appendix F: Junction Review Summaries

Site R1- A259 / B2182 / Peartree Lane (Little Common Roundabout)

Scheme Proposal: Convert the existing roundabout to a signalised junction

Impacts and Constraints:

- Five-arm oval-shaped roundabout connecting key routes, including A259 Little Common Rd. The principal flow is likely to be along the A259 corridor with heavier north-south flows on Peartree Lane and Cooden Sea Road
- Rother Local Plan will add approximately 650-750 veh per hour to the junction in the peak periods approximate 22-27% increase from without Local Plan scenario
- In total, 2,870 veh per hour (two-way flow) are forecast on the A259. A peak directional flow of 1,520 veh per hour on the A259 eastbound will exceed theoretical link capacity of 1,300-1,400 veh per hour
- High-level modelling indicates delays would generate on A259 (W) Barnhorn Road in the AM and A259 (E) Little Common Rd in the PM. All other arms would operate close to capacity and mitigation is likely to be required
- Potential mitigation could include conversion to signals - noting that the war memorial and five-arm junction arrangement will be key constraints. A feasibility study is needed to build on previous NH studies and look at options

Opportunities:

- Consider converting to signals and potentially rationalising number of approaches if suitable alternative routes can be found
- Select Vehicle Detection (SVD) for the future to implement bus priority measures
- Relocation/incorporation of bus stop and improved public realm and access to war memorial
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists can be accommodated at the junction along the desire line

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R3- A259 / West Down Road

Scheme Proposal: Explore right turn lanes, roundabout or signalised junction

Impacts and Constraints:

- Priority junction formed of main A259 and two minor approaches of Western Down Road either side of green space to the north and leading to Turkey Road and eventually the A269
- Local Plan will increase demand along the A259 by around 540 veh per hour in isolated Rother option and around 915 veh per hour in cumulative scenarios, during the peak periods
- In total, 2,650 veh per hour (two-way) are predicted along this section of the A259. The A259 is likely to be exceeding theoretical link capacity of around 1,400 to 1,500 veh per hour in both peaks in certain directions
- It would be challenging for West Down Road traffic to find gaps in through traffic and the lack of right turn lanes and a westbound bus stop on the A259 could result in delays and mitigation is likely to needed
- The mitigation options could be to convert into a normal roundabout or a signalised T-junction, potentially rationalising the West Down Road approach into a single arm
- Key constraints include land availability, specific designations and further feasibility assessment is needed of potential options

Opportunities:

- Converting existing priority junction to a signalised layout expected to generally accommodate the forecast Rother Isolated and Cumulative Local Plan flows
- Improved pedestrian facilities to meet desire lines
- Select Vehicle Detection (SVD) for the future to implement bus priority measures, in case proposed layout would be signalised

Imagery @2022 Google, Imagery @2022 CNES/Airbus, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R4- A259 / A269 London Road Signals Junction

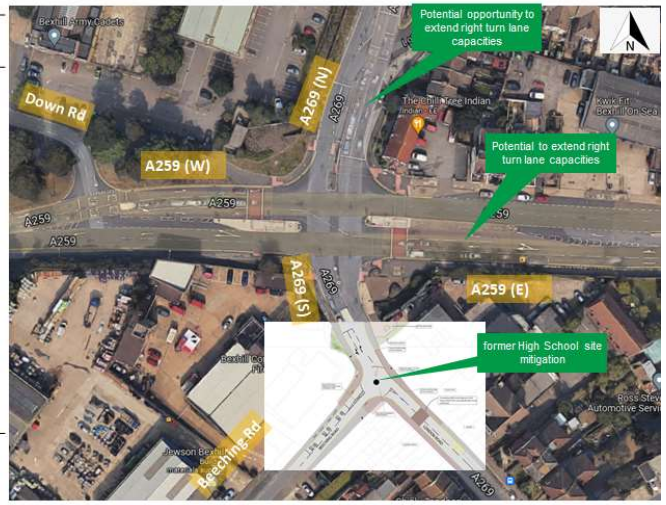
Scheme Proposal: Former High School Site development to provide committed mitigation. Additional mitigation could consider revised pedestrian arrangements and additional right turn lane capacity on all approaches

Impacts and Constraints:

- Four-arm signalised junction connects key north-south A269 London Road / Coombe Valley corridor with the main east-west A259 corridor
- Cumulative Local Plan scenario will add approximately 630-840 veh per hour during the peak periods (lowest in the PM peak), almost 17-23% increase from without Rother option
- In total, 3,150 veh per hour (two-way) are predicted along this section of the A259 (W) with peak directional flow of around 1,600 veh per hour on the western A259 arm and exceed link capacity of 1,300-1,400 veh per hour
- The A259 and A269 approaches, particularly right turns, are likely to be exceeding capacity and subject to delays in both peaks with all the Rother and cumulative growth
- Option to build on potential committed improvements from nearby former High School development consent and previous NH options to improve a left turn slip on the A259 and explore additional lane capacity on main approaches and revised pedestrian crossing arrangements to improve capacity
- Key constraints will include land availability and what is achievable within building line

Opportunities:

- Opportunities to extend the right turn lanes at the A259 and A269 approaches – which is likely to require land take outside the existing highway boundary
- Explore options to improve pedestrian crossing arrangements and staging



Imagery @2022 Google, Imagery @2022 CNES/Airbus, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R7- A259 / A269 / Dorset Road Signalised Junction

Scheme Proposal: Significant mitigation, other than retiming of signal staging, unlikely to be needed at this stage

Impacts and Constraints:

- Four-arm signal junction connects key A269 Dorset Road corridor with the A259 corridor. Majority of the LP flows are expected to be along the A259 corridor and A269 Dorset Road.
- Isolated Local Plan will add approximately 320 veh per hour (14% increase) to the junction during the peak periods and Cumulative scenario will add almost 460 veh per hour (18% increase) at this junction.
- Peak directional EB flow of around 1,185 veh per hour is predicted on the western arm of A259 and likely to be within theoretical capacity (1,300-1,400 veh per hour). Other three arms expected to be within capacity.
- High-level modelling indicates potential for some delay in the AM peak hour on A259 (W) and Dorset Rd North arms but retiming of signal staging could keep the junction within overall capacity
- At this stage, and subject to further modelling, significant physical junction improvements are unlikely to be required

Opportunities:

- The existing signalised layout is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility
- Select Vehicle Detection (SVD) for the future to implement bus priority measures
- Incorporate options being considered by ESCC (via NH funding) to improve the junction for active modes and overall public realm

Imagery @2022 Google, Imagery @2022 CNES/Airbus, Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R8- A259 Glyne Gap Roundabout

Scheme Proposal: Increased flare capacity on A2036 and additional lane on Retail Park arm.

Impacts and Constraints:

- Five-arm roundabout which connects A259 Hastings Rd with A2036. Lewis Avenue and road leading to a retail park form the other two arms of this roundabout. The major flow directions are between A259 (SE) and A259 (W) and A2036 arms.
- Local Plan will add approximately 500 veh per hour during the peak periods, almost 18% increase from without LP scenario.
- In total, 2,600 veh per hour (two-way) are predicted along this section of the A259. Peak directional (WB) traffic around 1,700 veh per hour is predicted on the western arm of A259 and operates over to the threshold link capacity of 1,300-1,400 veh per hour for a single lane.
- High-level modelling shows, that maximum delays would generate on A2036 arm in both peaks and on Retail Park in the PM. Therefore, to mitigate such delays, physical improvement would be required. All other three arms would operate below its capacity.
- Potential mitigation measures include flare capacity improvement on the A2036 and lane addition at the Retail Park approach. Further investigation and local junction modelling would need to confirm the feasibility of these measures.

Opportunities:

- The existing roundabout with mitigations identified is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility study.
- Further consideration needed of potential bus priority measures and dedicated pedestrian and cycling crossing facilities.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R12- A269/A2036 Hollier's Hill Junction

Scheme Proposal: Signalisation is to be considered further.

Impacts and Constraints:

- A priority T-Junction located on A269 that links Hazard's Green and Bexhill-on-Sea via the villages of Ninfield and Sidley.
- Most traffic is along A269; also, a high proportion of traffic is likely to be between A269 (N) and A2691 Wrestwood Road. Local plan to increase flows by 10-11% (around 280 veh per hour) during the peak periods.
- Local junction modelling indicates significant delays likely to generate on the A2036 Wrestwood Road minor arm.
- In previous studies conducted on behalf of ESCC, multiple mitigation options have been looked at, such as improved priority layout, normal or mini-roundabout and signalised junction.
- In Nov 2019 study, a signalised layout is preferred in providing adequate capacity. Due to bus stop relocation, and potential traffic cutting through the petrol pump issues, a decision has been made not to progress with this proposal.
- Further Countywide modelling needed to understand likely impacts at this junction

Opportunities:

- The potential for rearranging bus stops and changing petrol station access arrangement to implement signalised layout and linking with the Elva Way junction needs to be explored.
- Select Vehicle Detection (SVD) for the future to implement bus priority and Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R10- A269/Turkey Road

Scheme Proposal: Addition of flare capacity on A269 approaches and thereafter potential signalisation of the existing mini-roundabout.

Impacts and Constraints:

- Local Plan will add approximately 220 veh per hour during the peak periods, almost 12% increase from the future base scenario.
- With the increase in LP flows the existing roundabout would likely operate within the capacity, except the A269 NW arm in the AM peak. There is a potential for some delays at this arm that would need further mitigation.
- Current mini-roundabout layout would not offer a significant spare capacity. The existing junction appears to have some land availability within the highway boundary that would offer some opportunities to provide additional capacity, particularly along the A269.
- Local widening of approach lanes would be beneficial based on further design and modelling studies, if found feasible and beneficial. Therefore it is suggested to consider adding a flare lane on both A269 arms before considering the junction to a signalised layout.
- The proposal to add flare lane capacity on the A269 approaches and further mitigation to a signalised junction is likely to cater for the Local Plan traffic flows increases.

Opportunities:

- The mitigation of adding capacity of the existing roundabout is expected to generally accommodate the forecast Rother Local Plan flows
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R11- A269/A2691 Roundabout

Scheme Proposal: All arms would within capacity. No further improvement is required to current layout.

Impacts and Constraints:

- This three-arm roundabout is located on the western end of North Bexhill Access Road (A2691) connects with the A269. It is a newly constructed roundabout and does not cater to a significant traffic at the moment.
- The A2691 is a newly opened single carriageway road that connects the A2690 to the A269, bypassing the village of Sidley, providing a bypass for traffic in between A269 and A2690, leading to the A27 and Hastings.
- Most traffic through this junction is along with A269 SB to A2691. No link capacity issues are predicted along all the three arms of this roundabout of around 1,400 veh per hour.
- Local Plan will increase demand by 30% (370 veh per hour) during the peak periods.
- With predicted Isolated LP flows, minor delays are likely to generate on the A269 NW arm; but would operate significantly less than its saturation levels.
- All arms would operate with sufficient capacity to accommodate more growth in the future. Therefore, no mitigation is required to the current layout.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan and Cumulative Local Plan flows.
- Proposed layout does not include any dedicated crossing for pedestrians and cyclists, which should be explored in the future.

Site R9- A2691/A2690 Roundabout

Scheme Proposal: All arms would operate less than it threshold capacity. No further improvement is required to current layout.

Impacts and Constraints:

- This four-arm roundabout is located on the North Bexhill Access Road and Combe Valley Way (also known as the Bexhill-Hastings Link Road). It is a newly constructed roundabout and currently does not cater to high volume of traffic.
- The A2691 is a newly opened single carriageway road that connects the A2690 to the A269, bypassing the village of Sidley.
- Most traffic through this junction is along with A2690 SB (around 1,550 veh per hour). therefore, the link is forecasted to operate over its peak directional capacity of around 1,400 veh per hour.
- Local Plan will increase demand by a moderate 7-8% (260-280 veh per hour) during the peak periods, most of around increase would be along A2690.
- With predicted Isolated LP flows, moderate delays are likely to generate on the northern arm of A2690; and would operate close to its saturation levels, but not likely to exceed.
- All other three arms would operate with sufficient capacity available to accommodate more growth in the future. Therefore, no mitigation is required to the current layout.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows.
- Proposed layout does not include any dedicated crossing for NMU's, particularly cyclists, which should be explored in the future.

Site R2- A268/B2087/A21 Signalised Junction

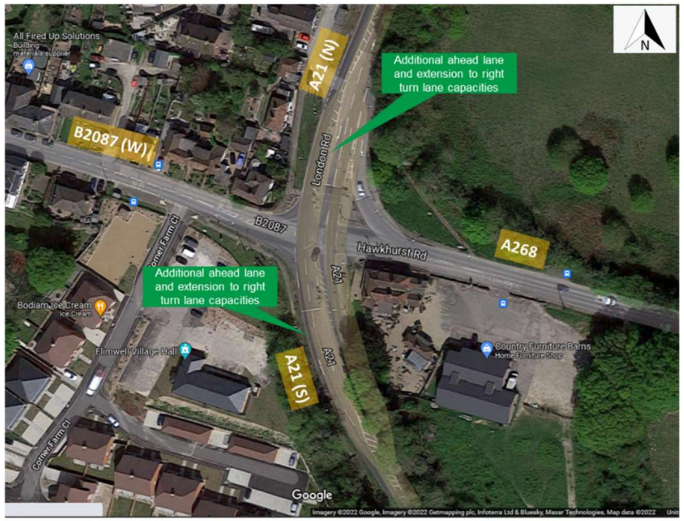
Scheme Proposal: Improve signalised layout to include additional ahead lane on A21 approaches with extension to right turn capacity.

Impacts and Constraints:

- Four-arm signalised junction connects A268 Hawkhurst Road with the A21 corridor, also provides access to Flimwell High Street. Most of the LP flows are expected to be along the A21 corridor and A268 Hawkhurst Road.
- Local Plan will add approximately 250 veh per hour during the peak periods, almost 15% increase from without LP scenario.
- Peak directional traffic of around 1,390 veh per hour is predicted on the northern arm of A21 and operates at its threshold link capacity of a single lane that is 1,300-1,400 veh per hour. The other three arms are expected to witness lower traffic levels, therefore not likely to face any major link delays.
- High-level modelling shows, that delays would generate in both peaks on A21 (both SB and NB) and A268 arm, and would operate almost 20-25% over its saturation levels.
- In future, junction would need some physical improvement, including additional ahead lane and increased right turn lane capacity on both A21 approaches and also a flare lane addition on A268 arm.

Opportunities:

- Improvement to the signalised layout is expected to generally accommodate the forecast Rother Local Plan flows, subject to further modelling and feasibility study.
- Select Vehicle Detection (SVD) for the future to implement bus priority measures



Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R24- A21/A229 Cooper's Corner

Scheme Proposal: Convert existing priority T-junction to a standard roundabout layout.

Impacts and Constraints:

- A229 forms a minor arm of this A21 priority T-junction. Local Plan will increase demand along A21 by around 300 veh per hour during the peak periods.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected around 1,200-1,400 veh per hour. Therefore, the link capacity predicted for A21 along this junction will exceed the capacity but will not likely cause significant delays.
- In total, traffic exceeding 2,300 veh per hour (two-way) likely to use this section of the A21. Therefore, it would cause delays for A229 traffic (subjected to traffic prediction) to find gaps in the major road movements.
- The junction is located in a semi-rural environment, potentially where land for junction improvement can be available. The mitigation proposal would be to convert into a standard roundabout, if minor road flows support this option. This is also subject to further feasibility and local junction modelling.

Opportunities:

- Converting existing priority junction to a roundabout is expected to generally accommodate the forecast Rother Local Plan flows.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R15- A265/A21 Priority T-Junction

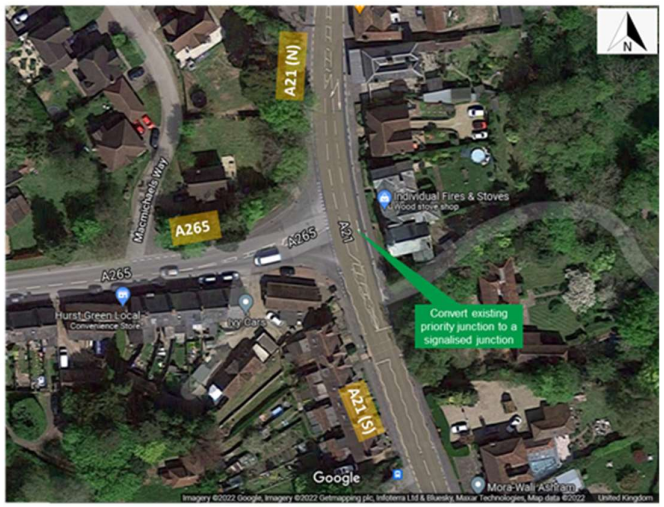
Scheme Proposal: Convert existing priority T-junction to a roundabout or a signalised layout.

Impacts and Constraints:

- A265 forms a minor arm of this A21 priority T-junction at Hurst Green. Local Plan will increase demand along A259 by around 320-350 veh per hour during the peak periods, an almost 16% increase from the future base scenario.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected to be highest, around 1,450 veh per hour predicted as SB movement in the PM peak scenario. Therefore, the link capacity predicted for A21 along this junction is expected to exceed its capacity slightly but is not likely to cause significant delays.
- In total, 2,300 veh per hour (two-way) are predicted along this section of the A21. Therefore, it would be cause delays for A265 traffic (more than 300 veh per hour) to find gaps in the A21 through movements.
- Since the junction is located in a built environment with limited highway land available, the mitigation proposal would be to convert into a signalised T-junction, subject to further feasibility and local junction modelling.

Opportunities:

- Converting existing priority junction to a signalised layout expected to generally accommodate the forecast Rother Local Plan flows.
- Select Vehicle Detection (SVD) for the future to implement bus priority measures.
- Dedicated, safe and convenient crossing facility for pedestrians and cyclists to be considered in future improvements at this junction.



Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R23- A21_Silver Hill Junction

Scheme Proposal: Convert existing priority T-junction to a roundabout or a signalised layout.

Impacts and Constraints:

- Bodiam Road forms a minor arm of this A21 priority T-junction At Silver Hill. Local Plan will increase demand along A259 by around 300 veh per hour during the peak periods.
- The A21 is a busy single carriageway SRN corridor; the one-way link peak capacity is predicted to be around 1,300-1,400 veh per hour.
- The peak directional traffic on A21 (N) arm is expected around 1,200-1,400 veh per hour. Therefore, the link capacity predicted for A21 along this junction will exceed the capacity but will not likely cause significant delays.
- In total, traffic exceeding 2,300 veh per hour (two-way) likely to use this section of the A21. Therefore, it would cause delays for Bodiam Road traffic (subjected to traffic prediction) to find gaps in the major road movements.
- The junction is located in a semi-rural environment, potentially where land for junction improvement can be available to support if any local road alignment is needed.
- The potential mitigation proposal would be to convert into a standard roundabout if minor road flows warrant this option. This is also subject to further feasibility and local junction modelling.
- If land availability and road alignment become an issue, the alternative would be convert into a signalised layout.

Opportunities:

- Converting existing priority junction to a roundabout or a signalised junction is expected to generally accommodate the forecast Rother Local Plan flows.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R25- A21 Northbridge Street Roundabout

Scheme Proposal: No immediate mitigation identified at this stage. Potential mitigations would be capacity improvement to flared lanes on A21, and Church Lane approaches.

Impacts and Constraints:

- Existing roundabout has an inscribed circle diameter greater than 40m, and is likely to provide moderate capacity. The existing layout does not generate significant delays along the A21 at the moment .
- All four approaches have a two-lane approach, with longer flared lanes on the A21 approaches.
- It is likely that Northbridge St might experience some delays while giving priority to NB circulating traffic from A21 (S) in both peak periods.
- It is not likely that predicted LP flows increases would significanty impact this junction and the approaching link's capacity. However, this is subjected to further traffic forecasting and local junction modelling.
- No immediate mitigations identified at this stage.
- However, there are potential mitigations options available, which could include addition of capacity to flare lanes at both A21 and Church Lane (west) approaches. The provision of further capacity on the Northbridge Street can be relatively challenging, due to land availability constraints.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows. There are options available to provide further improvement in capacity, if needed.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022

Site R22- A21 Johns Cross Roundabout

Scheme Proposal: No immediate mitigation identified at this stage. Potential mitigation identified would be an addition of flare lanes on A21 (W) and A2100 London Road approaches.

Impacts and Constraints:

- Existing roundabout has approx. 60m inscribed circle diameter, therefore likely to provide adequate capacity and does not experience significant delays on A21 approaches at the moment.
- The northern approach of A21 does have two lanes at the give-way approach. However, A21 Vinehall Road (west) and A2100 London Road (south) only have a single lane approach.
- It is likely that A2100 London Road might experience some delays while giving priority to NB circulating traffic from A21 (W) in the AM peak.
- It is not likely that predicted LP flows increases would significantly impact this junction and the approaching link's capacity. However, this is subjected to further traffic forecasting and local junction modelling.
- No immediate mitigation is identified at this stage.
- However, there are potential mitigations options available, which could include the addition of a lane at the A21 Vinehall Road (west) and A2100 London Road (south) approaches.

Opportunities:

- The existing roundabout is expected to accommodate the forecasted Rother Local Plan flows. There are options available to provide further improvement in capacity if needed.

Imagery @2022 Google, Imagery @2022 Getmapping plc, Infoterra Ltd & Bluesky, Maxar Technologies, Map data @2022