South East Dorset Urban Mobility Strategy

Strategy Report

Dorset Local Enterprise Partnership
In partnership with BCP Council and Dorset Council

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Acronyms and Terms

AADF	Annual Average Daily Flow
AADT	Annual Average Daily Traffic
Active Modes	Walking and cycling mode of travel
AM	AM Peak Hour
AMCB	Analysis of Monetised Costs and Benefits
Appraisal	Assessment of proposed transport interventions
BCR	Benefit Cost Ratio (BCR) - the level of benefits relative to costs. A BCR greater than 1 indicates that the benefits outweigh the costs (Value for Money Framework, Box 5.1)
CAV	Connected and Autonomous Vehicle
COBA-LT	COst and Benefit to Accidents – Light Touch), a DfT computer program used as part of economic appraisal
DARTS	Dorset Area Rapid Transit System
DfT	Department for Transport
EB	Eastbound
EV	Electric Vehicle
HOV	High Occupancy Vehicle
IB	Inbound
IP	Interpeak
ITS	Intelligent Transport System - transport and traffic management
ITSO	National smart ticketing standard for public transport
KSI	Killed Seriously Injured
MaaS	Mobility as a Service - the integration of various forms of transport services into a single mobility service accessible on demand, typically through a mobile phone app
Micromobility	Refers to small, lightweight vehicles operating at speeds typically below 15.5 mph (25 km/h). Examples include bicycles, Ebikes, electric scooters, electric skateboards, shared bicycles, and electric pedal assisted bicycles
Mode shift	Refers to relates people changing their primary mode of travel e.g. switching from car to cycle
NB	Northbound
NPPF	National Planning Policy Framework
NTEM	National Trip End Model
OBC	Outline Business Case
Paramics	A proprietary 3D traffic microsimulation software package
PCU/PCUs	Passenger Car Unit / Passenger Car Units
PM	PM Peak Hour
PT	Public Transport
PVB	Present Value of Benefits
PVC	Present Value of Costs
SB	Southbound
SEDMMTM	South East Dorset Multi-Modal Transport Model
SEDMMTS	South East Dorset Multi Modal Transport Study (2012)
SEDUMS	South East Dorset Urban Mobility Strategy (2020)

SOBC	Strategic Outline Business Case
TAG	Transport Appraisal Guidance – guidance for transport appraisal. Can be found online at WebTAG
TCF	Transforming Cities Fund
TDM	Travel Demand Management
TEMPro	Trip End Model Presentation Program
TUBA	Transport User Benefit Appraisal, a DfT software program used as part of economic appraisal
ULEV	Ultra Low Emission Vehicle
V/C ratio	Volume Capacity ratio - the ratio of hourly volume of traffic to capacity for a transportation facility, used as a measure of congestion
VfM	Value for Money - an assessment of whether each pound spent will deliver sufficient benefit
VISSIM	A proprietary multi-modal traffic flow simulation software package
WebTAG	See 'TAG'
WB	Westbound

Dorset Local Enterprise Partnership

Dorset Local Enterprise Partnership is a business led private and public sector partnership that aims to promote local economic growth and prosperity. Acting as a strategic gateway to funding, Dorset LEP supports and delivers projects of long-term economic benefit for all in Dorset through cross sector partnership.

Established in 2011, Dorset LEP is responsible for speaking on behalf of businesses, championing important issues with government and ultimately driving the economic growth of Dorset. Dorset LEP is responsible for setting the strategic direction for the Dorset economy and controlling an investment programme of around £250m. Working in partnership with local government, businesses, educational institutions and other public, private and community sector organisations, Dorset LEP seeks to keep Dorset firmly on the map.

For more information visit Dorset LEP http://www.dorsetlep.co.uk/

Local Growth Fund

Local Enterprise Partnerships are playing a vital role in driving forward economic growth across the country, helping to build a country that works for everyone.

That's why by 2021 Government will have invested over £12bn through the Local Growth Fund, allowing LEPs to use their local knowledge to get all areas of the country firing on all cylinders.

Executive Summary

This South East Dorset Urban Mobility Strategy (SEDUMS) sets out a transport strategy for the period to 2038, to facilitate economic growth through enhanced mobility and connectivity. The strategy covers the Bournemouth, Christchurch and Poole unitary authority (BCP Council) area as well as sections of Dorset Council area. This definition reflects the functional transport geography of the area and as adopted by other recent studies, including the Transforming Cities Fund business case (2019).

Developed on behalf of the Dorset Local Enterprise Partnership (LEP) and in partnership with the Local Authorities, this strategy set outs a series of investment packages that collectively work towards creating a modern transport system that meets the needs of residents, businesses and visitors, that accommodates growth and enables increased productivity. It reflects economic, population and housing growth aspirations, the transport and economic landscapes and the increasing potential of technological innovation in the future. In doing so it replaces the 2012 South East Dorset Multi Modal Transport Study (SEDMMTS).

Existing Conditions and Drivers for Change

Establishing a sustainable Mobility Strategy was founded on first identifying the current and anticipated future drivers for change i.e. those factors that will influence travel demand and choices during the next 20 years. BCP and Dorset Councils have both declared climate emergencies and highlight the importance of tackling the impacts of transport emissions as part of their planned responses. Thematic areas including demography, social context, commuting patterns, and education and leisure attractions were also identified as priorities for the area, and examples of existing challenges highlighted:

- An ageing population, with a higher than average proportion over 65 compared to UK, and a forecast that this group will continue to grow in the period to 2038;
- An historic spatial/infrastructure pattern that was skewed toward the car, with 80% of households having access to a car but 20% of residents continue to rely on non-car modes;
- 50% of trips to work under five kilometres being completed by car as well as 60% of all commuting trips, compared to 54% for the UK; and
- Nearly 40% of trips to primary and secondary schools in the South East Dorset area are undertaken by car.

The South East Dorset area provides a relatively unique geography, comprising the three centres of Poole, Bournemouth and Christchurch in a coastal setting with complex interactions between land uses and trip making. The existing transport network is characterised by variable connectivity and accessibility to key services by public transport across the study area, further contributing to high car-dependence in some locations. Buses provide essential access to education, work and leisure for many and South East Dorset has experienced substantial passenger growth in the last 10 years; this was during a period where national bus patronage levels have declined. The contribution of the rail network remains limited (2% of mode share), with a network providing relatively low journey speeds, a line providing only East-West connectivity, ageing rolling stock and stations that often do not cater for all trip types; 4 of 9 stations do not currently provide cycle parking and 7 stations have no step-free access.

Over a third of the population of South East Dorset do not meet the recommended 150 minutes of physical exercise per week. The propensity to walk and cycle in the area is influenced by busy roads and junctions, and perceptions of personal safety. The road network is heavily congested at peak times, leading to delays, inefficient mobility and poor air quality; for example, the A338 is the 4th most congested road in UK. The area's regional and international connectivity (e.g. the ports) is also set to continue growing. However, current access predominantly supports car use.

Within this context there are extensive opportunities for economic growth, building on the existing high levels of employment and the high value nature of much of the area's employment base. Further

enhancements to the area's transport network, to increase connectivity and mobility, will support this whilst also transitioning to a low carbon future.

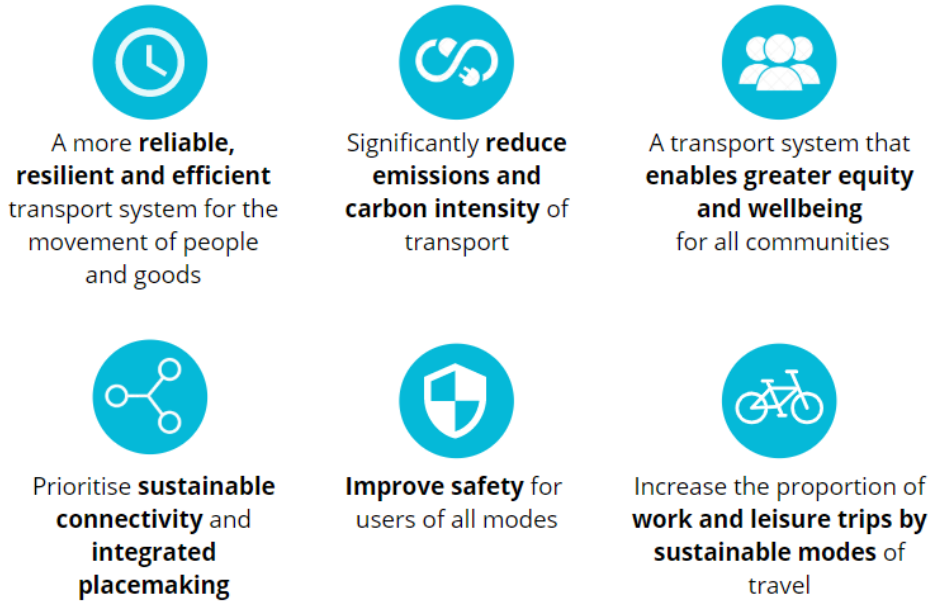
Strategy Vision, Themes and Objectives

To ensure that the Mobility Strategy will build on the existing transport network and socio-demographic characteristics of the area to deliver truly sustainable mobility, a vision of the future has been defined. The vision was established to encapsulate the overarching policy objectives and aspirations for the area and to direct the appraisal of individual investment options:

> *"Our vision is for South East Dorset to be a prosperous, competitive and well-connected area with reliable and safe mobility for all, with an enhanced natural and built environment supporting improved wellbeing.*
>
> *We will deliver a transport system which makes movements easier and healthier by enabling a genuine variety of travel choices, whilst embracing the opportunities that technological innovation can provide"*

Three policy themes were also defined to support the vision and to inform strategic objectives:

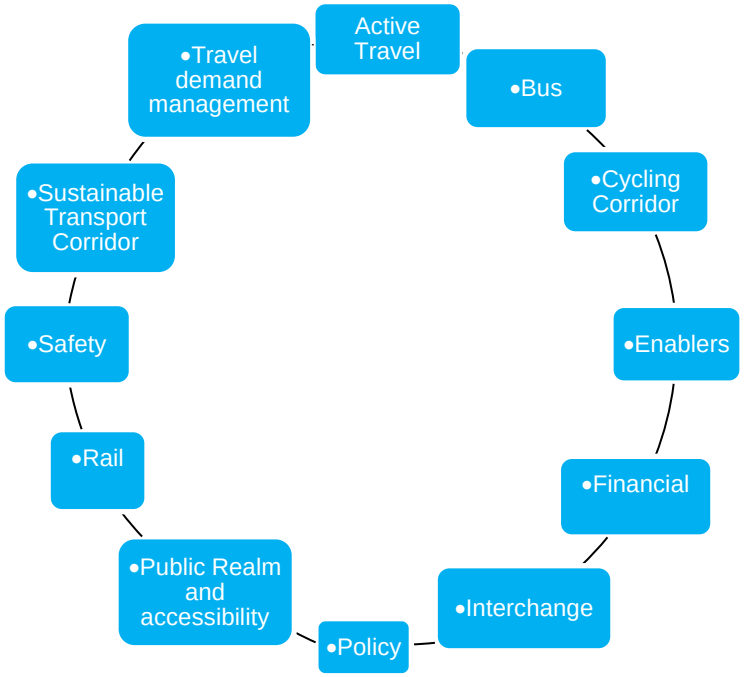
Together, the vision and themes provide the policy framework within which future investment will be made. These are further supplemented by the definition of six objectives by the project stakeholders, consisting of clear and unambiguous statements against which potential interventions and packages could be assessed.



Developing and Testing the Mobility Strategy

A comprehensive and inclusive approach was adopted for the identification of potential interventions for inclusion within the Mobility Strategy. Extensive stakeholder consultation was undertaken to ensure that all voices were heard, and all potential investment options were considered. This resulted in a long list of 171 potential interventions being identified, ranging from well-defined short-term schemes to aspirational concepts to influence travel behaviour.

Using the vision, themes and objective framework, a collaborative sifting process was undertaken by AECOM, Dorset LEP, BCP Council and Dorset Council to assess and score each option. This resulted in a short list of 121 potential interventions, which were aggregated into 12 'topics' that reflected their type, nature and potential influence on future transport in the area:



Each of the topics were defined to include sub-topic areas of similar interventions and the outline timescales within which they could be implemented (short, medium or long term). The sub-topics reflected both the preparatory activities that will be required prior to implementation (e.g. business case preparation or detailed design) and their alignment with the strategy objectives and thereby their potential contribution to future economic growth. A preliminary assessment of the costs associated with implementation was also undertaken at this sub-topic level, to feed into the packaging for appraisal and implementation plan.

The output of the option identification and sifting exercise was a series of sub-topic intervention packages that could be implemented in phases. A selection of these packages was included within a high-level strategic modelling assessment to consider the scale and location of impacts on the area's transport network. The South East Dorset Multi-Modal Transport Model (SEDMMTM) was used for this assessment, consisting of highway and public transport modes.

To enable a robust assessment to be made, specific growth scenarios were defined for this study for the forecast years of 2023, 2031 and 2039. This was deemed necessary because the observed growth between 2012 and 2017 in the South East Dorset area did not match the decrease predicted by National Trip End Model (NTEM). Scenarios for inclusion in the modelling were defined and agreed with BCP Council and Dorset Council for use. A consistent set of model outputs were produced for each modelled scenario to enable comparison between the scenarios. Outputs included:

- The number of vehicles on the roads;
- The number of public transport passengers;
- Highway delays; and
- Journey times along the main corridors in the region.

The **Do-Minimum** scenario for the AM peak period for each forecast year provided a benchmark for comparison with the mobility strategy phases. The 2023 modelling reflected current network conditions with increased road delays due to background growth in population and travel demand. Some locations, such as Creekmoor and the A351/A350, were identified as experiencing particularly high increases in traffic flows and associated delays by 2023. The 2023 to 2039 period saw a continued increase in delays in the Do-Minimum scenario, with close to a 250% increase in the number of over-capacity junctions in the area by 2039.

Locations of greatest increased delay included junctions near proposed strategic development clusters in Poole and Bournemouth, further highlighting the importance of the Mobility Strategy in facilitating future growth. For example, the highest journey time increase was observed along the A350 in the northbound direction, with journey times over 25% greater in 2039 compared to 2023. It was also noteworthy that there was little change forecast in the level of public transport use between 2023 and 2039 (in the do-minimum scenario), in part due to the congested nature of the network and the lack of relative advantage for on-street buses.

Do-Something packages of interventions were developed from the sub-topics, based on the anticipated timescales required for investment. These packages were indicative of the short-listed interventions and were constrained by how they could be replicated within the model; for example, packages of public transport investment were replicated through applying an assumed modal shift from car to bus, rather than the introduction of detailed linked-based schemes in the model. The modelling assessments were therefore comparative analyses of the impacts of top-down changes in network use rather than the detailed assessment of individual interventions.

In the modelling of the 2023 do-something scenario there was a significant redistribution of traffic across the network, but especially within the centre of Bournemouth. This was attributed to the proposed selected road closures and introduction of 20 mph zones across the area. The short-term strategy phase was also forecast to result in an increase in public transport use of approximately 19% across the whole area. The sustainable transport corridors, cycling corridors and wider travel demand management enablers would underpin such a change.

In the 2031 scenario, the cumulative effect of a second phase of sustainable transport corridors and supporting travel demand measures were forecast to further reduce traffic and increase the use and mode share of public transport modes. The relative journey times of the bus, enhanced through prioritisation, increased its use and its role in providing efficient and competitive connectivity. This pattern was forecast to continue in the 2039 Do-Something scenario, with further reductions in car use and increased sustainable mobility, in part facilitated by the more integrated nature of land use and transport planning.

Economic Appraisal

The strategy would result in significant improvements in journey times, reductions in distance travelled and an increase in average speeds. By 2031 in the peak hours, travel times could typically reduce by 15-20%, distance travelled could reduce by 16-22% and average speeds could increase by up to 4km/h across the study area. The financial cost of doing nothing in terms of traffic congestion will be substantial.

The outputs from the South East Dorset Multi-Modal Transport Model assessments were used to undertake an economic appraisal of implementation phases; the appraisal of individual packages or interventions was not possible given the aforementioned approach to modelling. The appraisal included the assessment of:

- Travel Time Benefits and Vehicle Operating Costs using the DfT software ‘TUBA’;
- Accident Analysis – The predicted change in accidents associated with the package of measures assessed using the DfT software ‘COBA-LT’; and
- Scheme costs – included defined costs where known for committed 2023 interventions or estimates from similar projects or professional judgement.

The appraisal determined that the core scenario of interventions in 2038 produced a **BCR of 5.48**, which represents very high value-for-money. The appraisal of wider economic impacts quantified the

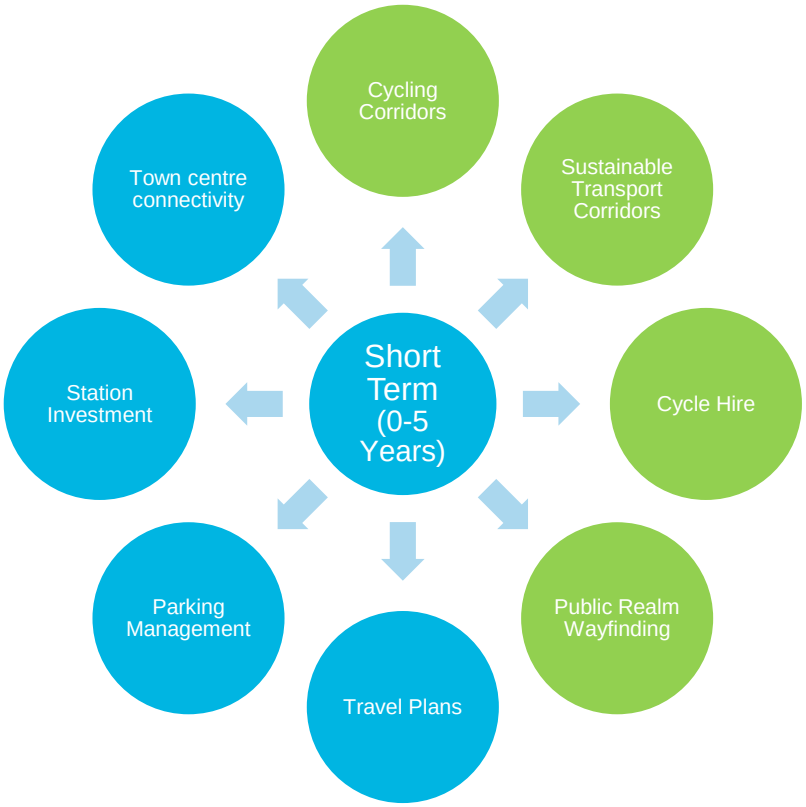
potential impacts on the local, regional and national economies, generated by changes in accessibility and connectivity due the example transport interventions in the strategy.

The 2038 Mobility Strategy was forecast to generate approximately **£520 million of wider economic benefits** through increased productivity and output. The majority of the benefits (approximately £500 million) would be realised through increased economies of agglomeration with the strategy improving accessibility between firms and their suppliers, markets and workers. The wider economic impact benefits equated to 15% of the conventional user benefits (TAG level 1 PVB).

The strategic modelling assessments demonstrated **a strong case for action** based on the forecast value for money and wider economic benefits. The Do-Something scenarios reflected the potential enhanced connectivity, mobility and social-inclusion that could be achieved by creating a more sustainable transport network. Therefore, this Mobility Strategy can be used as part of the evidence base when bidding funding opportunities. Whilst it should be remembered that the scenarios applied depended on top-down changes in mode split they represent what could be achieved through coordinated transport, land use and economic policy and planning.

Implementation Plan

An implementation plan was developed to assist in progressing from the high-level packages to well-defined and deliverable interventions. The plan will require annual review by Dorset LEP, BCP Council and Dorset Council to track progress as package elements are delivered and to bring in the newly defined and opportunistic interventions which will inevitably emerge. The plan sets out a prioritised and phased implementation process for three timescales, including elements for the first five years illustrated below (green are committed and well-defined interventions):



Short-term concept interventions include changes in working practices, increased implementation of technological solutions, smarter travel demand management programmes, modal filters at key access points and wider interventions to influence school-related travel and walking/cycling more generally. These interventions include those that have proven impacts in other UK cities and would require targeted implementation in South East Dorset.

The medium-term implementation plan to 2031 should seek to build on the short-term foundation, with further investment in the remaining network of sustainable transport corridors. Further investment in public transport hubs will be required to support a wider range of trip types and interchanging,

including new hubs and improved accessibility and connectivity to existing hubs. The introduction of Mobility as a Service solutions should also be pursued in the medium term, to further engender and facilitate behaviour change and to utilise the changing transport network across the area.

The long-term implementation plan to 2038 includes interventions that will take time to progress through the development and planning stages, including investment in rail and potentially light rail solutions. Further transport hub investment should also be pursued to create a network of connectivity that fully reflects travel demand and supports/facilitates economic growth and social inclusion.

1. Introduction

1.1 Background and Aims

The South East Dorset Urban Mobility Strategy (SEDUMS) offers a transport strategy for the period to 2038 for the area which incorporates the Bournemouth, Christchurch and Poole unitary authority (BCP Council), alongside sections within the bounds of Dorset Council (Figure 1.1). This definition reflects the functional transport geography of the area and as adopted by other recent studies, including the Transforming Cities Fund business case (2019).

Developed on behalf of the Dorset Local Enterprise Partnership (DLEP) and in partnership with BCP Council and Dorset Council, this Mobility Strategy set outs a series of investment packages that collectively work towards creating a modern transport system that meets the needs of residents, businesses and visitors, that accommodates growth and enables increased productivity. It reflects economic, population and housing growth aspirations, the transport and economic landscapes and the increasing potential of technological innovation in the future. In doing so it replaces the 2012 South East Dorset Multi Modal Transport Study (SEDMMTS).

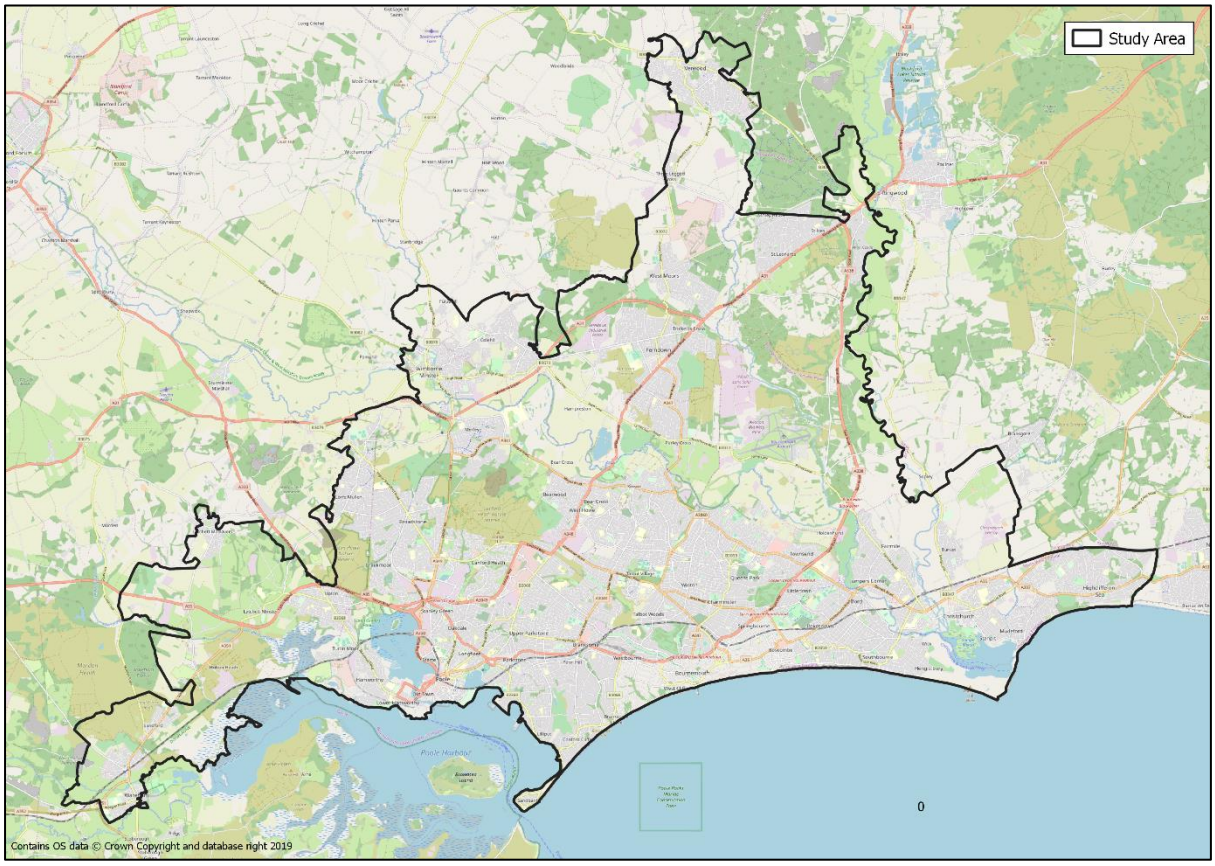


Figure 1: The South East Dorset Urban Mobility Strategy (SEDUMS) Study Area

Local and National Government policies are currently in the middle of significant changes that will impact the delivery of the South East Dorset Urban Mobility Strategy. This evolving policy context has therefore been reviewed in greater depth as part of the evidence review undertaken during this commission; the Evidence Review Report (Appendix A) forms part of the wider suite of documents produced throughout the development of the strategy. During this period a number of studies have been in progress or new studies announced which have not been included in the evidence base. The possible implications of these will need to be considered as they become available. Whilst the future is inherently uncertain, the strategy has been tailored to best position the South East Dorset area to take advantage of opportunities provided by current central Government policies and emerging trends.

At a local level, the declarations of Climate and Ecological emergencies are being supported by actions which will positively support greater use of active and sustainable forms of mobility in the area. Dorset LEP's Local Industrial Strategy, submitted as a draft to the Government in December 2019, aims to sustain and expand economic growth to promote positive economic, social and environmental impacts across all communities. In addition, the long-term local development plans for the area are in the very early stages of preparation and will have an impact on what future development will look like and where it will be located. Connectivity and movement are fundamental to enabling this growth in a positive, sustainable way.

At a national level, the future of mobility has been highlighted as one of the United Kingdom's four 'Grand Challenges'[1]. As a result, the Department for Transport produced a strategy for the future of urban mobility in 2019[2], which outlined the benefits wanted from mobility innovation and the principles that will help them to be achieved. The role of possible mobility technologies such as Connected and Autonomous Vehicles (CAVs), Mobility as a Service (Maas), micro-mobility, such as e-scooters and 5G enabled devices all offer massive potential. The strategy acknowledges that future mobility will be assisted by these new and emerging technologies, but that changes in behaviours and the need for established transport solutions such as active mode promotion, mass-transit and integration of different modes are still outlined to play a central role.

Active modes, mass transit and integration of different modes were also at the forefront of the 'Decarbonising Transport: Setting the Challenge' (2020) policy paper, which presents the Government's ambition to act quickly and decisively to reduce harmful emissions.

This Mobility Strategy has been designed in the context of addressing the preceding policy trajectory with these new and emerging priorities, such as transitioning to low carbon futures, whilst ensuring growth and excellent quality of life for all. Phased implementation of practical measures alongside aspirational and innovative elements provides flexibility and confidence. Although change is naturally daunting, this strategy offers the potential to rethink the areas mobility system and shape it to function better for everyone and the environment.

The following sections of this Introduction provide an overview of the local drivers for change in mobility and travel demand, the existing transport conditions, the challenge that the strategy therefore has to overcome and the methodology that was adopted to develop the strategy.

[1] Policy Paper: The Grand Challenge Missions, September 2019, Department for Business, Energy and Industrial Strategy. The other challenges being Artificial Intelligence and Data, Ageing Society and Clean Growth.
[2] Future of Mobility: Urban Strategy Moving Britain Ahead, Department for Transport, March 2019.

1.2 Key Drivers for Change

This section provides a short overview of the main drivers for change in the South East Dorset area, presented under the following themes:

- Demography;
- Social context;
- Commuting patterns; and
- Education and key leisure attractions.

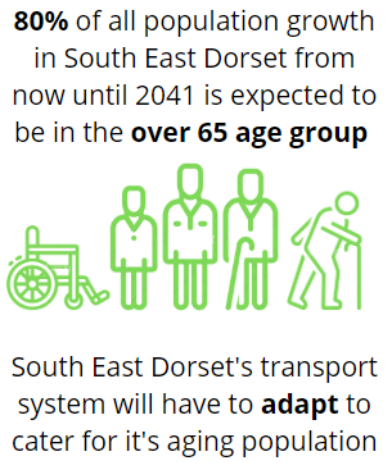
The information presented below is a summary of an extensive evidence review exercise undertaken at the start of the strategy development process, with the full review provided in Appendix A.

Demography

Where, when, how and why people travel varies throughout our lives, and therefore understanding the demographics of South East Dorset both now and in the future is of paramount importance.

The area currently has a higher than average proportion of citizens aged over 65 when compared to the rest of the country, with much of the population growth in the area forecast to be in this age group during the period of this strategy (to 2038).

Recent research[3] also suggests that young people are much less attached to driving cars than previous generations. Creating a mobility system which accounts for this changing travel behaviour in young people is important to continued economic vitality but must also work for the area's increasingly elderly population.



Social Context

When compared to the rest of the country, the South East Dorset area experiences relatively low levels of deprivation. Statistically, only 2% of the area falls within the top 10% of deprived areas of England and Wales. In addition, the Dorset LEP area has a highly economically active working age population, with employment levels 3% higher than the national average.

However, it is crucial to look beyond these statistics and recognise that there are still people in the area who suffer from high levels of deprivation, in both urban and rural settings.

Levels of car ownership vary across South East Dorset, reflecting the area's diverse geography and demographics. 80% of the population live in a household with at least one car, meaning that at least 20% of people have to rely upon walking, cycling, scooting, wheelchairs and/or public transport to get about. Rural and inter-urban areas have the highest levels of car ownership per household, with the lowest levels of car ownership in the most densely populated urban areas, including areas of Poole, Bournemouth and Christchurch.

The future mobility strategy therefore needed to take these factors into account. Although transport is not the sole cause of, or cure for, this deprivation, mobility and accessibility inequalities are highly correlated with social disadvantage. In particular, lower-income households, the elderly, and young people tend to have disproportionality less access to transport (and in particular cars). A mobility

[3] Chatterjee et al. (2018) Young People's Travel – What's Changed and Why? Review and Analysis. Report to Department for Transport

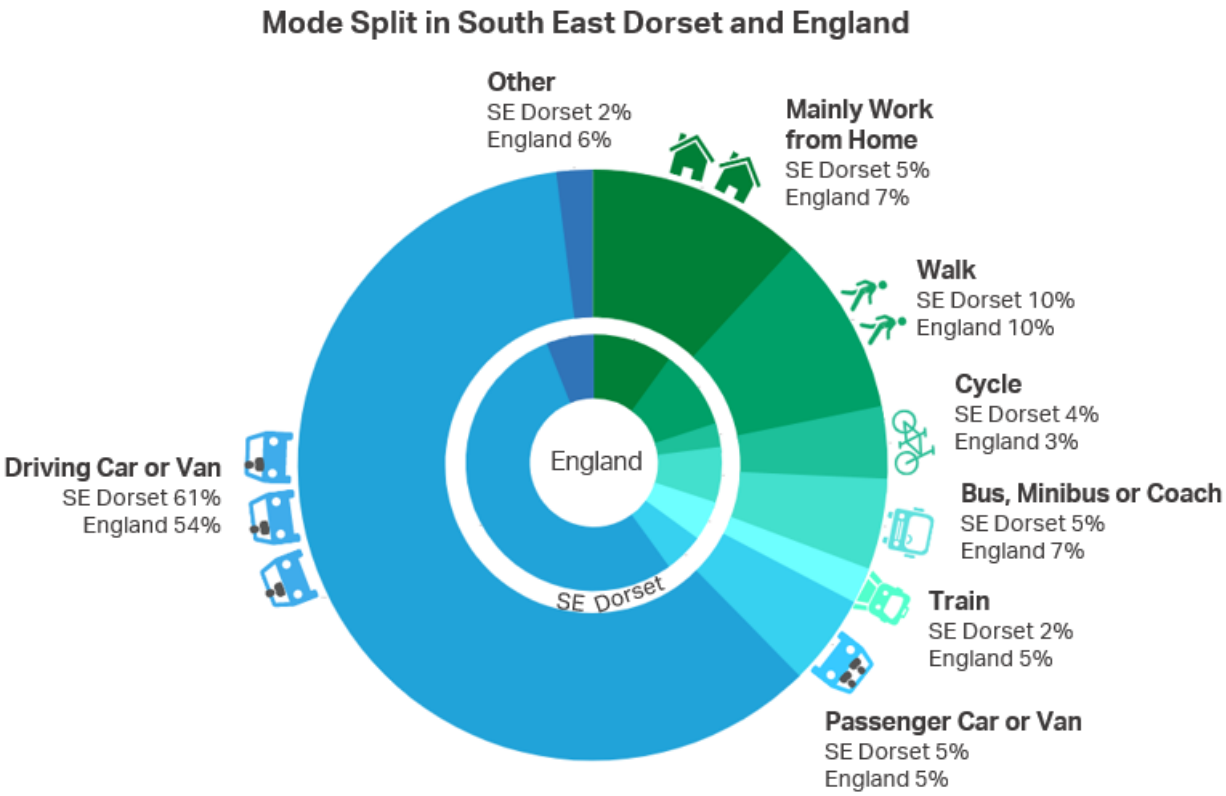
network is needed that benefits all members of society by providing better access to important services and opportunities, by a variety of means.

Commuting Patterns

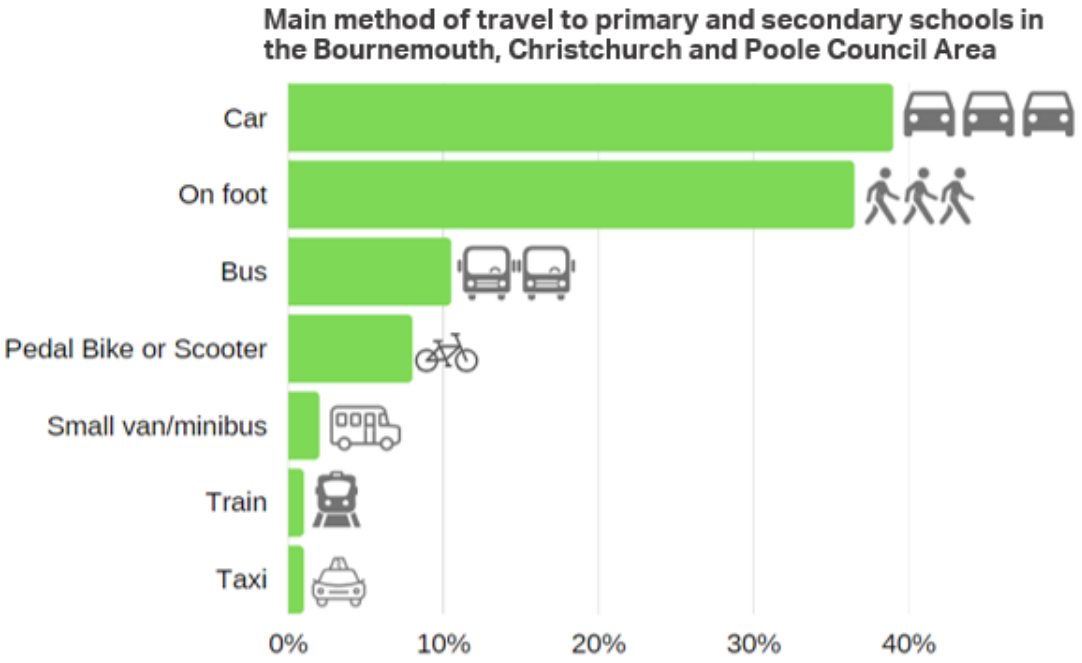
As a geographically diverse area, the ways in which people travel to work in South East Dorset varies greatly depending upon where they live and work. Many of the largest employment locations within the area are in, or near to, the most densely populated residential locations. However, several mobility and wider societal factors mean that people often live some distance from where they work. This in part a consequence of the relatively unique geography of the area comprising the three centres of Poole, Bournemouth and Christchurch in a coastal setting with complex interactions between land uses and trip making.

50%
of trips to work which are **under 5km** are completed by car

At an area-wide scale, more people work from home than the national average, but those who do travel to work rely more heavily upon their cars than the rest of the country. These trends may become more exaggerated following the Covid-19 pandemic of 2020. In addition, people tend to rely upon their cars to get to work even for shorter journeys where alternatives are available. National evidence suggests that many people would like to drive less if they could, so providing opportunities for them to do this is crucial if we are to support healthier, happier and greener lives.



Education and Key Leisure Attractions



Travel within South East Dorset is about more than just getting to or from work. For the majority of the year, the mobility network also allows children to get to school and young adults to places of training or higher education. It also provides access for visitors to the many leisure attractions that the area has to offer. However, the dispersed nature of these key locations presents connectivity challenges, and the current network significantly favours car travel. The mobility network needs to consider the mobility needs of all travellers, especially those without access to a car, broadening the appeal of destinations to all.

The above key drivers for travel demand and mobility will be central to establishing a more sustainable transport network in the area. Also critical will be building on and influencing the current transport conditions in the area, which are briefly explored in the next section.

1.3 Existing Transport Conditions and Future Challenges

Developing and implementing a mobility strategy for the South East Dorset through to 2038 must start by identifying the current transport conditions, the challenges that these present before developing opportunities for the future. This section provides a brief overview of the existing transport conditions, considering:

- The overall public transport network accessibility;
- The bus and rail networks;
- The active travel network;
- The areas road network;
- Consideration of the aviation, ports and harbour markets in the region; and
- Future mobility.

Public Transport Accessibility

Although the area has a relatively extensive public transport network there still remain locations where travel by private car enables greater accessibility. Whilst public transport provides relatively good accessibility for travel within the vicinity of major urban centres, accessibility to/from the suburbs and further afield is much lower than by private car. This is illustrated in

Figure 2, highlighting the good access immediately surrounding the urban centres but demonstrating the larger areas where journeys times are up to 30 minutes and a significant area where journey times are beyond 30 minutes. This observation partially explains why those with cars rely upon them for many journeys, but also emphasises why there is a need to create greater equality in accessibility to move towards a more sustainable transport system.

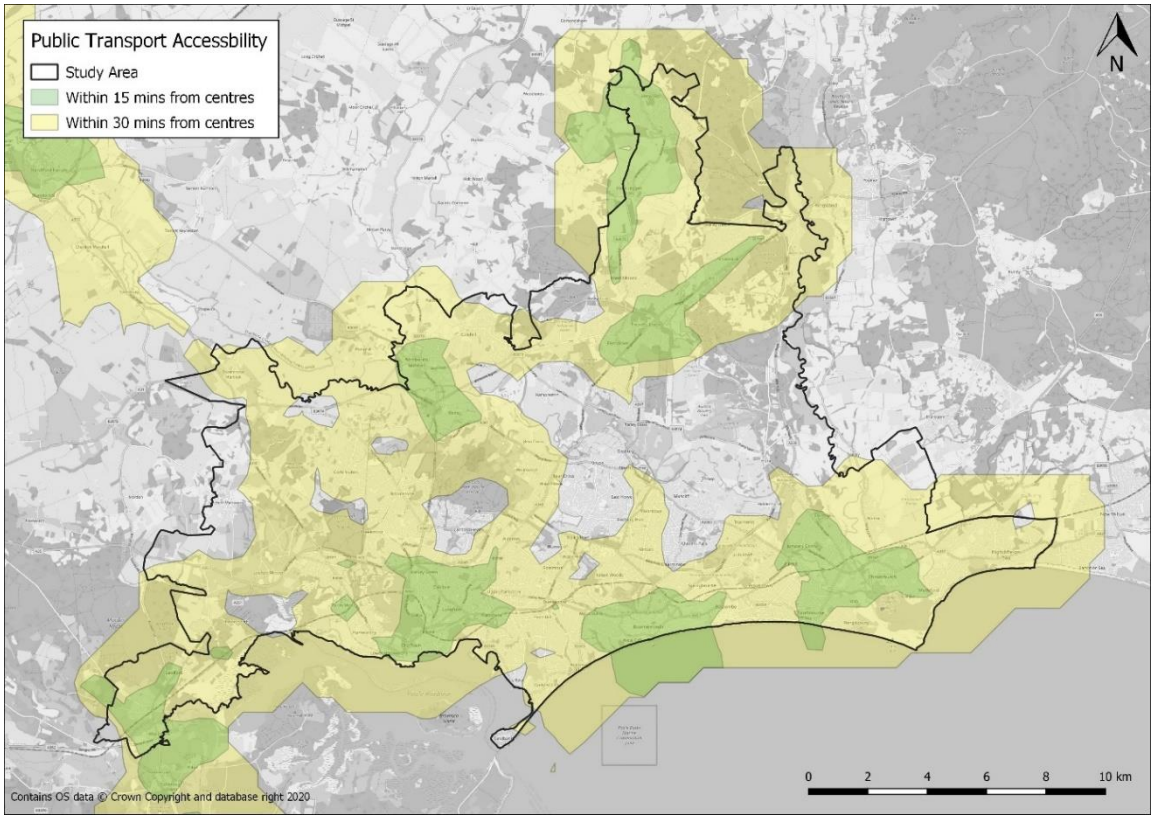
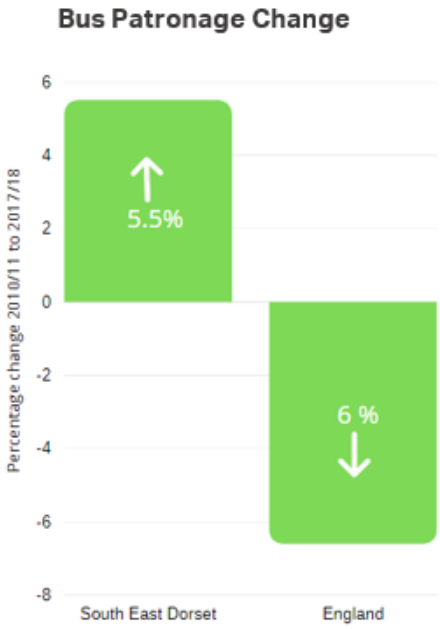


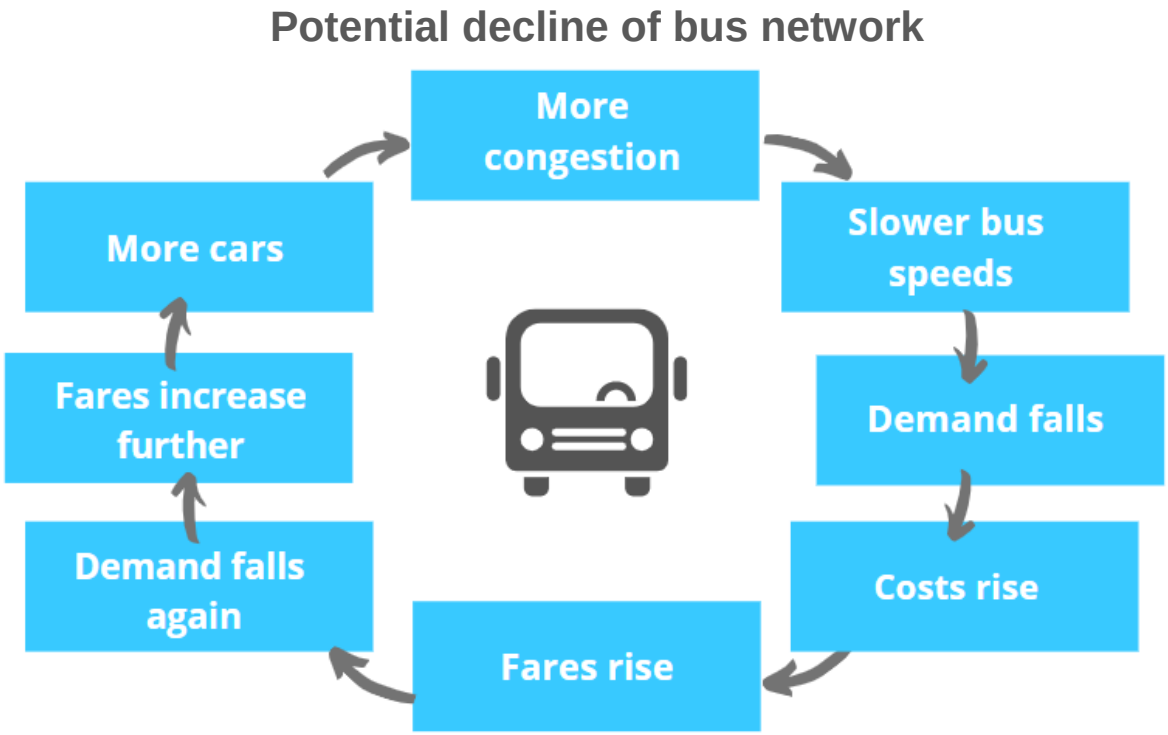
Figure 2: Public Transport Accessibility

Bus Network

Buses provide essential access to education, work and leisure for many, especially those who do not have access to a car. Despite many areas in the country experiencing significant reductions in bus travel in recent years, bus use in South East Dorset has experienced substantial passenger growth. The high levels of passenger satisfaction reported cite the relatively inexpensive and frequent services, particularly between Poole and Bournemouth. However, this positive perception of bus travel may not be experienced across the area where services are less frequent and journey times unreliable; a lack of lane segregation for buses on some routes means that journey times for bus users are impacted by increasing congestion.

Unless these challenges are addressed, there will be significant negative impacts for bus users. Reallocating road space improves bus journey times and makes buses more attractive, including for current car drivers; improvement to the bus network benefit everyone.

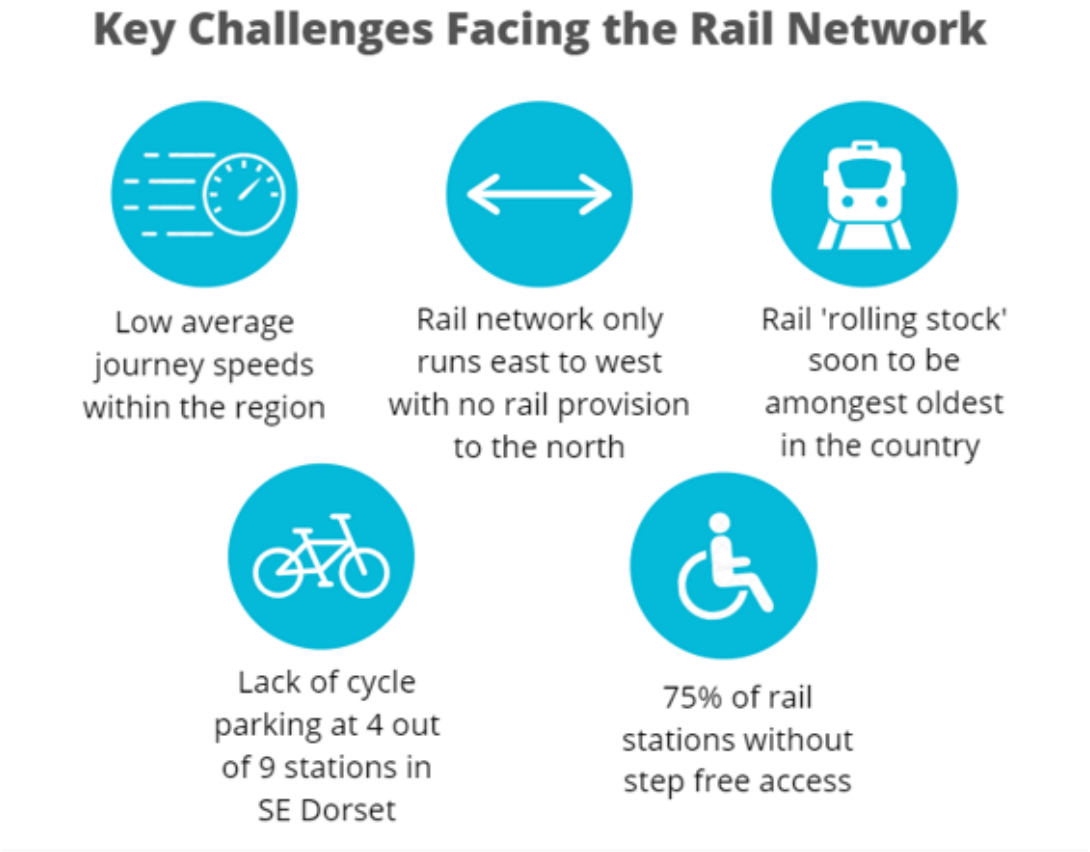




Rail Network

The rail network provides crucial links within, and outside, of South East Dorset. As observed in other areas of the UK, rail passenger numbers in South East Dorset have grown significantly in recent years, experiencing passenger growth of approximately 10% since 2010/11. The network currently provides reasonable connections to further afield locations such as Southampton and London in peak hours but faces several challenges in the near and distant future.

A journey by rail is about more than just the services; it is about how travellers get to and from the

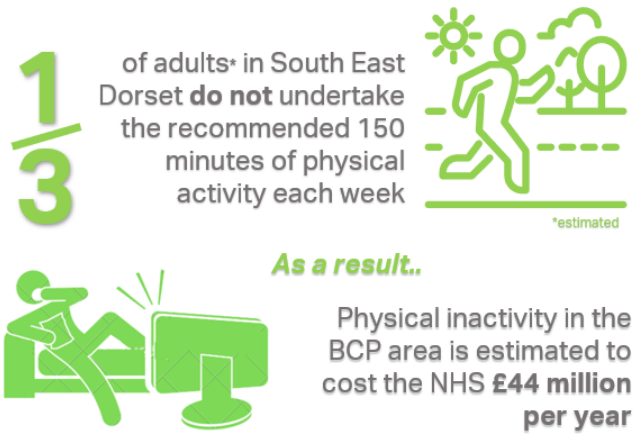


stations and movement around the stations itself. Over three-quarters of the stations within South East Dorset do not have step-free access to all platforms, which presents a significant physical barrier that limits the ability to travel by rail for many. It is critical that these key challenges are addressed for rail to contribute to improved mobility, both within the conurbation and the wider network.

Active Travel Network

Physical inactivity is an important societal issue, with serious implications for public health and the economy. According to Public Health England, physical inactivity is responsible for one in six deaths in the United Kingdom and is estimated to cost the £7.4 billion annually (including £0.9 billion to the NHS alone)[4]. Over a third of the population of South East Dorset do not meet the recommended 150 minutes of exercise per week. It is estimated that this costs the NHS £44 million per year for the South East Dorset area.

Despite there currently being over 250 kilometres of cycling facilities across the area, 50% of trips that are less than 5 kilometres (20 to 30 minute cycle) are made by car. There are many reasons why people do not walk or cycle more (or at all), including high levels of road traffic and safety fears.



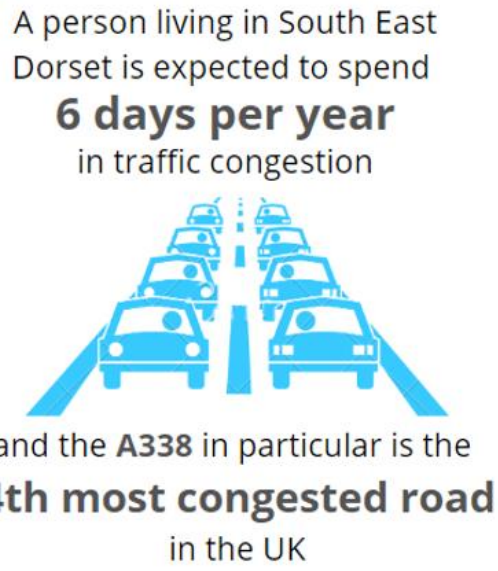
With evidence suggesting that physical activity can lead to a variety of socio-economic and environmental benefits, it is evident that the promotion of active travel modes can help to meet multiple objectives.

[4] Public Health England (2019)

Road Network

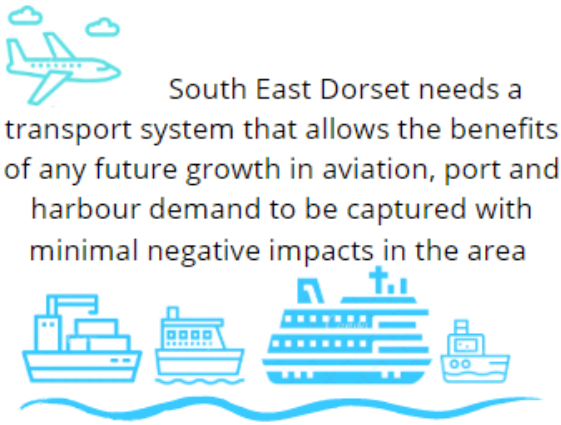
A large proportion of trips in the area are taken by car and therefore having a safe and efficient road network is important. The road network is also significant for those who do not drive, including bus users and cyclists. However, reliance upon the road network, combined with roads not designed for such a large number of cars, has negative side effects with implications for the future mobility network. The roads within the area are some of the most congested in the country, contributing to low levels of local air quality and disproportionately impacting the safety of non-car users.

Historic local and national road improvements often provide travel benefits for a short period of time, but these gains gradually reduce and the problems return. Given the severity of financial and environmental constraints within the area and across the globe, continuing to expand the road network is most likely no longer viable. A mobility network is needed that is safer, healthier and greener for all modes, as well as being efficient for those who still need to drive.



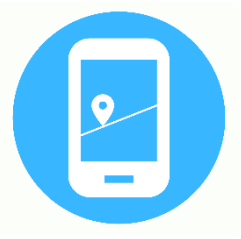
Source: 2019 TomTom 'Traffic Index'[1]

Aviation, Ports and Harbours



The airport, ports and harbours provide access to places and goods further afield, in addition to supporting the economy. Passenger numbers at Bournemouth airport have increased slightly since 2010 and whilst Poole Harbour is catering for relatively constant volumes of passengers and goods, developments such as the cruise ship terminal mean that it is well positioned for future growth. However, for those without access to a car, getting to/from these key locations by non-car modes of transport is currently difficult. A mobility network is needed that allows the benefits of any future growth to be captured whilst minimising negative impacts in the area.

Future Mobility



Transport and mobility is important in creating opportunities for many elements of a successful society, enabling people to connect with places and each other. How and why people use the transport system has changed in recent years and it can be expected that this will continue to change over the next twenty years. New innovations in technologies, electrification and automation bring new opportunities to transform the transport system and the way people use and interact with it.

Real world trials of Connected and Autonomous Vehicles (CAVs), autonomous home delivery services, Mobility as a Service (Maas) and micro-mobility public hire schemes involving e-scooters are demonstrating possible futures. The roll out of 5G enabled devices offers massive potential for a transport 'Internet of Things,' realising greater inter-connectiveness and efficiencies. But the path to adoption is not always clear, with regulatory, policy and spatial issues to resolve, aside from how travellers will choose to use and adapt their behaviours to the opportunities available to them. South East Dorset is well placed to innovate and take advantage of these new and emerging technologies to deliver the transport system of the future that meets the needs of all.

1.4 Summary of the Challenge

Whilst the current transport networks in South East Dorset work for many people there remain a number of key challenges in the short and long-term. For example, although employment levels are higher than the national average, this masks the reality that some people will still suffer deprivation, with poor transport accessibility being a potential contributory factor. The area also currently has a higher than average proportion of citizens aged over 65 when compared to the rest of the country, with much of the population growth to 2041 in the area forecast to be in this age group. Catering for this growing population with specific transport needs/perceptions, the younger generations that are less car-dependent and the overarching objective of supporting economic growth is challenging.

South East Dorset needs a mobility system which can help to address these current challenges and remain resilient in the face of changing societal demands in the future. Climate change adaptation and transition to low-carbon technologies will have implications for how society operates, how people live and the decisions they make about travel. The fast-paced changes in transportation technologies, electrification and automation provide opportunities to deliver transformative change, but each bring new challenges for delivery if the benefits are to be realised.

The way that the transport system has developed historically has meant that the car remains the most heavily used mode for getting around South East Dorset, even for relatively short trips. The ongoing reliance upon the car for all sorts of trips has many negative economic, social and environmental consequences, especially for those who do not have access to a car. An integrated, mobility system providing choice is critical, but change also requires a transformation in attitudes and behaviours.

Despite recent growth in bus and rail travel in the area, the continued growth of these modes is threatened by road congestion and wider connectivity challenges. As many trips in the area are relatively short, active travel modes have the potential to cater for a higher proportion of travel demand if the right conditions can be created, which will support multiple social and environmental objectives.

It is therefore critical to develop a mobility network for South East Dorset that is safer, healthier and greener for all users, as well as being efficient for those who still want to drive.

1.5 Overview of the Strategy Development Process

This Mobility Strategy for South East Dorset has been developed following a multi-stage process, which is summarised in Figure 3. The inclusive methodology involved extensive consultation with the LEP, local authorities and key stakeholders. Each of the steps is briefly outlined below.

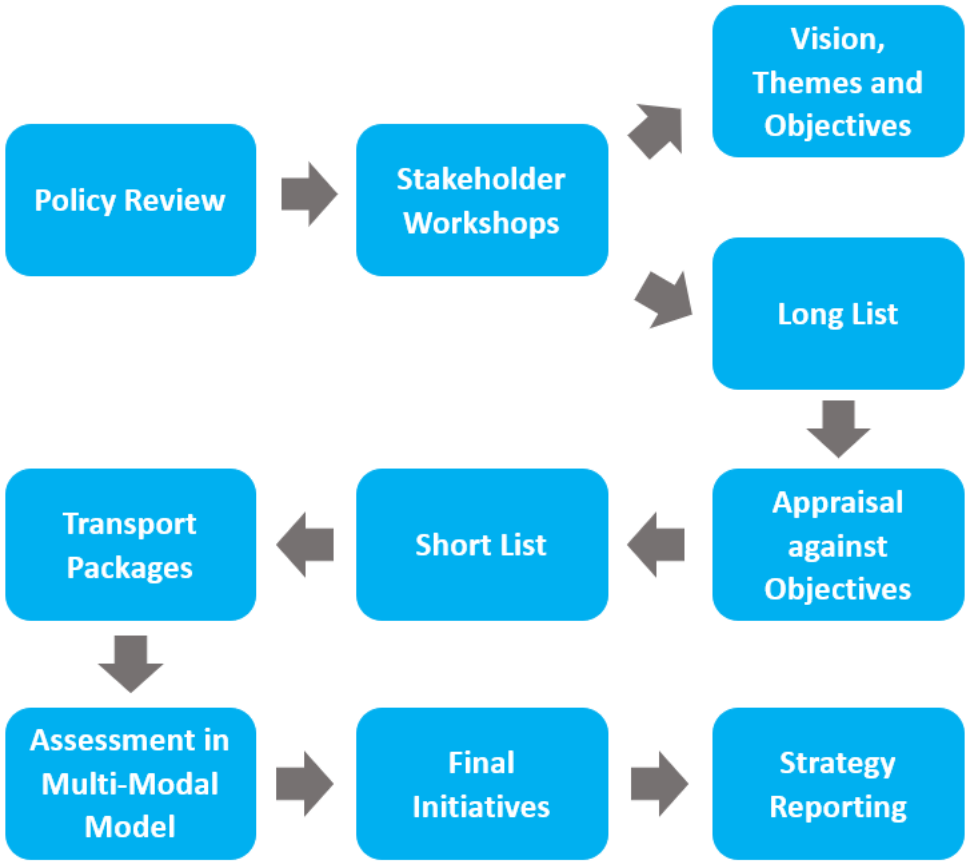


Figure 3: Strategy Development Process

Policy Review
The commission started with a policy and evidence review, during which the overarching purpose and objectives for the Mobility Strategy were considered. This included a review of local, regional and national policies, evidence of current transport provision and demand, to provide the context for the Strategy. A full overview of the outputs of this task is provided in the Evidence Review Report (Appendix A).

Stakeholder Workshops
Two rounds of stakeholder engagement were conducted to ensure that the Mobility Strategy was inclusive and, importantly, that the outputs were accepted. First, phone interviews were undertaken with key stakeholders representing Dorset LEP, Dorset Council and BCP Council. The purpose of these was to gather information, understand priorities for the study area, and also to inform the setting of the key objectives for the study.

Secondly, a stakeholder workshop, involving a wider range of stakeholders, was held to test the initial vision and themes for the Strategy, developed from the policy review, evidence review and initial stakeholder interviews. Stakeholders were also given the opportunity to highlight and discuss key mobility-related issues across the study area, and also to identify potential options for resolving these.

The outputs from the stakeholder engagement informed the development of a final Vision, Strategic Themes and Objectives for the Mobility Strategy. Section 2 of this report provides an overview of the agreed Vision and supporting Objectives, which underpinned all subsequent activities. The options

and potential solutions discussed also fed into the long list of interventions. The details and outcomes of the stakeholder engagement activities are provided in Appendix B.

Long List
A key step in the development of a transport strategy is the identification of options/solutions for consideration. As noted above, the long list of interventions for South East Dorset was informed by the policy and local context review, and particularly by the stakeholder engagement process, alongside the AECOM modal experts. Collectively, these identified a list of 171 potential interventions. Items in the long list were categorised and grouped into' topics', such as public transport, cycling or safety, and further details of these can be found in Appendix C. The topics are addressed in more detail in Section 3.1 of this main report.

Appraisal Against Objectives
To reduce the size of the long list into a more targeted and prioritised list of possible interventions, an initial sift was undertaken by seven independent assessors; this included members of Dorset LEP, BCP Council, Dorset Council and AECOM.

All 171 interventions were considered and scored against how well they aligned with the objectives of the Mobility Strategy using a seven-point scale, ranging from -3 to +3. This provided a measurable assessment and an overall score for each intervention. The project team scored interventions independently, resulting in seven different scores for each intervention. These scores were averaged to produce a final score for each intervention.

The overall scores were ranked in descending order to highlight the best scoring interventions, with low-scoring interventions were removed to leave a short list of 121 potential interventions, which can be seen in Appendix C. Interventions that scored seven or above in the initial appraisal formed the short list. This created a short list of 121 interventions, which included specific and more generic interventions.

Transport Packages
Another key consideration when developing the Mobility Strategy interventions was how would they be implemented and in particular how they might be packaged. This reflected the importance of considering how interventions could be funded, and whether packaged items would represent a more robust business case, and also the potential added benefit of implementing measures collectively. A collaborative approach was undertaken to identify, review, challenge and package interventions with project partners. The interventions within packages were selected to complement each other and reflect the realistic timescales and approach for implementation. This process also reflected the potential deliverability of interventions over the strategy period, based upon current/future funding priorities and the development stage/duration of interventions.

Multi-modal Transport Model
The packages were also developed so that their benefits could be robustly identified and quantified when assessed in the multi-modal transport model. A balance was therefore sought between identifying numerous packages that were tightly defined with defining packages that could robustly be modelled and appraised. To further enhance the overall assessment of the Mobility Strategy the interventions were categorised into the following implementation timescales:

- 0-5 years covering the immediate short term;
- 6-10 years covering the medium term;
- 11–15 years, forming the initial part of longer-term planning; and
- 16–20 years covering the period up to 2038.

These four time periods were run within the model and the detailed process and outputs are set out in Sections 4-6 of this report.

Finalise Initiatives
The outputs from the modelling and appraisal were used to determine the relative effectiveness of the proposed intervention packages and the potential level of benefit that could result in each time period.

This enabled confirmation of the final measures for inclusion within the strategy and the preparation of a detailed Implementation Plan.

Strategy Reporting
The final stage in the Mobility Strategy was the refinement of strategy elements and implementation process into this Strategy Report. This process included setting out:

- The rationale for the proposed interventions and how packages were developed and tested;
- The level of benefit/dis-benefit that could be anticipated above and beyond a do-minimum scenario; and

The specific tasks/process needed to move potential interventions towards deliverability, based upon current/future funding priorities interventions.

2. Vision and Objectives

2.1 Introduction

As set out in Section 1, a key initial step in the development of the Mobility Strategy was the definition and collective agreement of vision and objectives. This section sets these out including a short commentary on the process adopted. The vision and objectives were developed with reference to and to build upon local and national policy documents, with input from a variety of key stakeholders in the area and understanding the key challenges.

2.2 Mobility Strategy Vision

Establishing a single, overarching vision for the Mobility Strategy was important so that all subsequent assessment and prioritisation remained focused on its achievement. The vision was developed to ensure strategic alignment at each step, thereby supporting future funding bids and implementation. The vision, agreed by all key stakeholders, was:

"Our vision is for South East Dorset to be a prosperous, competitive and well-connected area with reliable and safe mobility for all, with an enhanced natural and built environment supporting improved wellbeing.

We will deliver a transport system which makes movements easier and healthier by enabling a genuine variety of travel choices, whilst embracing the opportunities that technological innovation can provide"

2.3 Supporting Policy Themes

Three key policy themes were also identified to support the vision and inform the subsequent creation of more specific strategic objectives. One of the key underlying requirements of the Strategy was to put people and places at the centre of future planning and investment. Transport alone cannot provide economic prosperity, reduce inequality or save the planet, but it can play a significant supporting role. The three policy themes for the South East Dorset Mobility Strategy are presented below:

2.4 Strategy Objectives

Within the context of the vision and policy themes it was critical to also define Mobility Strategy objectives. These were objectives that would help meet the vision, being clear and unambiguous statements against which potential interventions and packages could be assessed. The following six objectives were agreed with the project stakeholders:

A more **reliable, resilient and efficient** transport system for the movement of people and goods

Significantly **reduce emissions and carbon intensity** of transport

A transport system that **enables greater equity and wellbeing** for all communities

Prioritise **sustainable connectivity** and **integrated placemaking**

Improve safety for users of all modes

Increase the proportion of **work and leisure trips by sustainable modes** of travel

These objectives also align with the policy themes in the following ways:

Objective		Economy	People and Places	Environment
	Efficiency	✔	✔	✔
	Emissions		✔	✔
	Equity and Wellbeing	✔	✔	
	Connectivity and Placemaking	✔	✔	✔
	Safety	✔	✔	
	Sustainable modes	✔	✔	✔

3. Developing the Mobility Strategy

3.1 Intervention Identification and Testing

In developing a mobility strategy that will meet the diverse needs of the population it was important to consider all possible solutions. It was also necessary to recognise that specific interventions are rarely implemented in isolation, and so packages were considered to more robustly reflect how investment would be made through to 2038.

Initiatives and interventions were considered through the review of local, regional and national policies, plus engagement with key local stakeholders and promoters of strategic development sites. This enabled the collation of a long list of 171 options and potential interventions. The long list included all interventions identified during the collaborative process, either by AECOM, Dorset LEP or key stakeholders. It was important to ensure that a fully inclusive process was adopted, and no options were rejected at this early stage.

Some interventions were already committed or planned, and the decision was made that these should not be taken forward into the short list on the basis that they would form part of existing investment.

Interventions included in the long list were a combination of specific measures, such as particular sites for travel planning or locations for road closures, and more generic concepts such as car clubs. It was again a conscious decision to include both types within the long and short lists to ensure completeness and not to reject potential solutions merely because of their early stage of definition or development. To provide additional structure to the long list, measures were grouped into the following topics:

- Bus
- Cycling Freight
- Highway Infrastructure / ITS
- Innovation and New Technology
- Interchange
- Parking
- Policy
- Public Transport
- Rail
- Safety
- Smarter Choices
- Walking

The initiatives were appraised against the objectives of the Mobility Strategy (Section 2.4), using a seven point scale (Table 3.1). This provided a measurable assessment and an overall score for each intervention. The maximum available score was 18 as a result of appraisal against the six objectives.

Table 3.1: Appraisal Scoring

Appraisal Score						
-3	-2	-1	0	1	2	3
Strongly Disagree	Moderately Disagree	Slightly Disagree	Neutral	Slightly Agree	Moderately Agree	Strongly Agree

The project team scored interventions independently, resulting in seven different scores for each intervention. These scores were averaged to produce a final score for each intervention. In general, interventions relating to public transport and cycling scored favourably. In comparison, interventions in the freight, highway infrastructure/ Intelligent Transport System (ITS) and innovation and new technology categories were generally low scoring. Full details of the appraisal is provided in Appendix C.

Interventions that scored seven or above in the initial appraisal were taken forward, producing a short list of 121 interventions, as outlined in Section 1.5. Sub-topic areas were defined again provide some

structure to the short list and recognise where similar intervention types existed. These sub-topic areas are:

- Active Travel
- Bus
- Cycling Corridor
- Enablers
- Financial
- Interchange
- Policy
- Public Realm and accessibility
- Rail
- Safety
- Sustainable Transport Corridor
- Travel demand management

A summary of the 12 topics and the interventions included within the short list are provided in Section 3.2 of this report. The individual scores are also presented in Section 3.2 and are categorised into implementation timescales:

- 0-5 years covering the immediate short term;
- 6-10 years covering the medium term;
- 11–15 years, forming the initial part of longer-term planning; and
- 16–20 years covering the period up to 2038.

The short-listed interventions were also critically reviewed and refined into transport packages for use in the South East Dorset Multi-Modal Model. This enabled the assessment of the forecast impact on traffic and the likely modal shift to public transport and/or active travel modes. This process is detailed in Section 5.3 of this report.

3.2 Exploring Intervention Topics

Travel Demand Management

Why is this Topic important?

The Travel Demand Management (TDM) topic covers a wide variety of interventions that will help to reduce/change the demand for the transport networks by changing how people chose to travel. At present, the transport network is characterised by a demand to travel to similar, key, destinations, at peak times and using the same modes of transport. The levels of traffic congestion, associated network inefficiencies and environmental/health impacts are a direct consequence of the decisions people make.

However, not everyone has to travel at the same time or by the same modes. Current travel behaviour is heavily influenced by routine as people seek to meet their work pressures or because there are no feasible alternatives. People can also benefit individually by traveling later so spending less time in congestion, or getting more active and spending more time with friends by walking or cycling to school. Behaviour changes would also collectively complement investments in schemes that improve accessibility for all and our environment. The contribution that TDM will make to achieving the Mobility Strategy objectives is summarised below.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Partially	Yes	-	Yes	-	Yes

What type of interventions does this Topic include?

Travel Demand Management interventions in the area have focused on measures such as workplace or school travel planning, and more recently on cycle grant schemes. These have been designed to work alongside larger scale infrastructure interventions to encourage behaviour change and reduce the strain on the transport networks. However, well designed TDM activities can themselves significantly contribute towards meeting the wider objectives outlined in the government's walking and cycling strategy, the 'Total Place' ambitions in the Local Industrial Strategy and the locally declared climate emergencies.

Through the approach set out in Section 1, a long list of TDM interventions were identified, assessed against the agreed objectives and 21 interventions retained on the short list. These have then been grouped together into sub-topic areas that reflect similar types of interventions. Table 3.2 presents an overview of the types of measure TDM could include, covering four main areas. Examples are provided of key destinations where targeted travel planning could modify travel behaviours. The changing nature of the working environment, travel patterns and locations is also reflected, recognising the longevity of this Mobility Strategy and the pace of societal change.

TDM is suited to respond to such change, providing opportunities to review travel behaviours and make new, informed choices as innovations and solutions emerge. Whilst Intelligent Transport Systems for public transport will continue to enhance network efficiency and reliability, new developments such as Mobility as a Service (MaaS) can influence an individuals' decision prior to journeys being undertaken, based on their preferences and the travel opportunities available. The four Future Transport Zones across England will further inform and direct targeted investment that is effective at changing travel behaviours.

Table 3.2: Short Listed Travel Demand Management Interventions

Sub-Topic	Interventions	Timescale*	Appraisal Score
Travel Plans for Key Sites	Bournemouth Airport and Aviation Park Travel Plan	Short	12
	Ferndown Industrial Estate Travel Plan	Short	9
	Increase in sustainable travel to/from tourist sites	Short	12
Change in business working	Businesses to introduce flexible working	Short	11
	Hot desk swap shop	Short	7
	Reducing the demand of Workplace Parking	Short	12
	Peak hour spreading	Short	7

Sub-Topic	Interventions	Timescale*	Appraisal Score
Alternative modal solutions	Intelligent Transport Systems on the Quality Bus Corridors	Short	8
	Promotion of car clubs	Short	8
	Transport Hubs - Cycle grant scheme for businesses	Short	9
	Travel Planning/Smarter Travel Choices Agenda	Short	13
	Freight Hubs	Medium	9
	MaaS Parking	Medium	7
	Investment in Sandbanks Ferry	Long	7
Traffic and Parking Management	Closure of Poole Park to through-traffic	Short	10
	Exclusion of cars and bikes on The Quay at Poole Harbour	Short	8
	Modal filters on side roads	Short	13
	EV / Cargo bike last mile deliveries	Short	11
	Road Closures	Short	9
	Enforcing controlled zones using Geo-fencing	Medium	7
	Closure of Bath Road Car Park	Medium	8

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

TDM-related investment and programmes have been adopted across the region for several years, primarily in support of wider transport strategies. As evidenced by the impacts and behavioural reactions to the 2020 Covid-19 pandemic, people can change their habits and behaviour very quickly when new opportunities or constraints are introduced. TDM interventions can also be implemented relatively quickly, although it is recognised that technology-based solutions require system development, testing and roll-out phases. Implementing a wider suite of TDM measures in the immediate short term (1-5 years) will be important to influence habitual behaviours and establish opportunities for future investment.

As the reasons influencing why people travel in the way they do are ever-changing, the Travel Demand Management interventions need to be prolonged throughout the period of this strategy and built into other policies that are currently in development, such as the Local Plans and Parking Standards Supplementary Planning Document (SPD)[5]. This continued commitment should then provide people with the support that they need in keeping positive travel behaviours even when they move home, jobs or schools and also minimise any impacts associated with the longer-term, aspirational infrastructure projects.

Cost of Implementation

- Low cost
- Multiple funding sources available
- Can be implemented as schemes, programmes or policies

Timescales for Implementation

- Short lead-in times as limited design requirements
- Good practice examples can be easily transferred

[5] At time of writing BCP Council were consulting on a draft Parking Supplementary Planning Document.

Policy

Why is this Topic important?

How people travel and the impacts that these choices have are influenced by, and also influence, a variety of key policy areas. If the breadth of the aspirational vision of this Mobility Strategy is to be achieved, it requires a series of complimentary policies to be put in place. At current, a number of the key influencing documents such as the Local Development Plans for the area are in early stages of development but will play a significant role in directing where and how development occurs. The current planning reforms presented by central Government have the potential to fundamentally change how development is planned but may also present opportunities to positively shape it in new ways.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Partially	Yes	Yes	Yes	-	Yes

What type of interventions does this Topic include?

Policy development examples include the promotion of sustainable land use by locating developments in areas which provide people with a variety of ways to travel to key services. These policies can then act as legal instruments when making detailed development decisions, as well as supporting the development of business cases for transport investment applications. These business cases can then also demonstrate how the range of policies created contribute to wider priorities, such as new job creation, supporting the delivery of housing or creating a 21st Century coastal city region.

Table 3.3: Short Listed Policy Interventions

Sub-Topic	Interventions	Timescale*	Appraisal Score
Political Strategy	Alignment of this Mobility Strategy with other policies	Short	13
	Political Bravery	Short	11
	Citizens assembly in study area	Short	7
Investment	Capital Maintenance Programme	Short	10
	Investment into sustainable travel	Short	14
New Developments	Development of housing close to town centres	Short	11
	Reduction in car parking in new developments	Short	11
	Sustainable land use	Short	13

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Much of the policy development is phased to occur in the early years of the Mobility Strategy, reflecting the central role of policy in enabling funding and delivery for many interventions. However, it is also important that policies are reviewed periodically to ensure they are adapted to continue to be fit for purpose.

The design of policy reflects many interest and perspectives. As such, there will be times where policies are unpopular with certain interests and will require strong leadership to be put in place and maintained for long enough to understand any positive or negative impacts across wider interests. Proactively increasing the role of the public in policy making discussions and bringing them along the journey from idea to daily use also has the potential to improve design and often provide unexpected support for less traditional interventions.

Cost of Implementation

- Low cost
- Funding not required

Timescales for Implementation

- Short lead-in times
- Tie-in with review of policies

Enablers

Why is this Topic important?

The measures in the Enabler theme encompass interventions which complement other themes in the strategy. These measures are primarily intended to support individuals in their adoption or use of a particular travel mode, thereby supporting or otherwise 'enabling' that activity. For example, cycle training gives individuals of all ages practical skills and confidence to cycle on today's roads. These skills enable people to make journeys now on the existing road and cycle network with the confidence that they can do so safely no matter what they encounter. Training is a valuable skill that remains as other infrastructure and road safety measures are delivered over the strategy period.

What type of interventions does this Topic include?

Journey planning and smart ticketing are examples of measures which provide travellers with an easier, integrated approach to public transport use. A journey planner accessible on any digital platform provides the opportunity and convenience to plan and understand travel options, improving access to sustainable transport options. A journey planning app can give the user optimised and tailored plans based on their preferences and parameters, providing convenience and choice. By ensuring public transport tickets conform to the national smart ticketing standard ITSO, seamless travel through the region and beyond for ultimate traveller convenience.

Table 3.4: Short Listed Enabling Interventions

Sub-topic	Intervention	Timescale*	Appraisal Score
Technology	Travel App	Short	7
	ITSO Compliant Smart Card	Short	8
Bus Travel	Provision of free bus travel for employees	Short	11
Cycling	Transport Hubs - Provision of cycle parking at key locations	Short	10
	Free adult cycle training	Short	8

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

These interventions can be implemented in the early phases of the Strategy, with the right tools and support. The value of these measures lies in their ability to support individuals in making positive travel choices. By enabling and supporting users, these measures support the adoption of non-car travel, such as cycling and public transport journeys, meeting the wider objectives of this strategy.

Interventions such as journey planners can also be implemented alongside, and in support of, the wider objectives outlined in the Local Industrial Strategy or aspirations outlined in the central Government Rail Strategy and A Better Deal for Bus Users.

Cost of Implementation

- Low cost
- Multiple funding sources available

Timescales for Implementation

- Short lead-in times
- Some interventions dependant on coordination with external companies (web-developers)

Active Travel

Why is this Topic important?

The term Active Travel is making every-day journeys by physically active means such as walking or cycling as an alternative to motorised journeys. A large proportion of people in the South East Dorset area, in common with national trends, are not getting enough regular exercise. This in turn places large pressures on the NHS and other health and social care services and contributes to higher sickness absences from work.

For most people, the easiest forms of physical activity are those that can be built into everyday life, such as walking or cycling to the local shop or commuting to work. Walking and cycling for short journeys reduces traffic congestion and emissions associated with vehicles, improving local air quality, and quality of life.

What type of interventions does this Topic include?

Promoting active travel measures is a stepping-stone to changing people's habits and becoming more physically active. The interventions included in this strategy, such as hire bike schemes, allow people to ride a bike without the responsibility of owning one. Other interventions such as car-free days encourages people within the study area to move around in safe, welcoming and more inclusive environment. Temporary car-free space thus becomes a platform to see the benefits of freeing up roads from traffic, allowing the creation of a new urban vision that is healthier, cleaner and provides a better quality of life for all. These measures can all be implemented in the short term.

Table 3.5: Short Listed Active Travel Interventions

Theme	Intervention	Timescale*	Appraisal Score
Cycle Hire	Beryl Bike Hire	Short	10
	E-bike hire scheme	Short	10
	Transport Hubs - Provision of cycle hire at key transport hubs	Short	10
Active Environments	Car-free Sundays	Short	10
	Playstreets	Short	10

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Active travel interventions are proposed to occur within the early period of the strategy. A transition to active journeys is supported by policy at a national, regional and local level because of the many benefits that arise from being more active. Active travel and greener travel choices is one of the key measures in the Local Transport Plan to meet the long-term vision for transport; however, these measures can all be delivered in the short-term for maximum benefit.

The promotion of active travel choices also form core elements of the national Future of Mobility and Decarbonising Transport policies, as well as local council corporates plans such as BCP Council's fulfilled lives objective. Active travel measures combined with other interventions such as public realm improvements, public transport and travel demand management collectively have the opportunity to transform BCP to becoming an active and thriving place to live.

Cost of Implementation

- Low cost
- Multiple funding sources available

Timescales for Implementation

- Quick delivery; however, is reliant on outsourced companies (hire scheme)
- Active environments interventions require more planning, slowing implementation.

Public Realm and Accessibility

Why is this Topic important?

Motorised road transport has dominated the planning and development of towns and local spaces. It is easy to forget that streets are not just there to provide a function in transporting people and goods; they are everyday spaces in which people live, work and play.

Towns and cities that make active travel a priority in their public spaces bring economic, social, safety, environmental and health benefits. Multiple studies have shown that shaping places better for walking can boost footfall and trading and increase employment and the number of visitors, and thus play a vital role in enhancing the social and economic life of communities.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
-	Partially	Partially	Yes	Partially	Partially

What type of interventions does this Topic include?

Improving public realm can potentially improve local people's overall quality of life. Good quality design provides accessible, safe and communal spaces for users of all ages and physical abilities. Designing an attractive and interesting environment for people to walk and cycle encourages them to take more active journeys more as part of their daily routines. Well-designed, accessible and inclusive streets creates cohesion between neighbourhoods and connects to key destinations. This leads to an overall healthier lifestyle and also reduces congestion and air pollution as people favour active modes over travelling by car.

Wayfinding is an important aspect of public realm. A well-designed wayfinding network communicates information about location and direction and informs decisions to guide people to their destination. Wayfinding is particularly important to support a walking and cycling journey in the built environment. Good quality, coherent and consistent wayfinding will be an essential tool in the success of the sustainable transport and cycling corridors.

Table3.6: Short Listed Public Realm and Accessibility Interventions

Sub-topic	Intervention	Timescale*	Appraisal Score
Station Improvements	Improved public realm and access to Bournemouth Station.	Short	10
	Improved station facilities and building at Poole Station.	Medium	10
	Improved walking route between Poole Station and Poole town centre	Short	10
Links from transport hubs	Pedestrian/ cycle link from Stadium to the town centre: as part of regeneration proposals for the	Short	11

Sub-topic	Intervention	Timescale*	Appraisal Score
to town centres	Stadium and Town Centre North Area, this link will be required as part of these developments.		
	Railway improvements to the town centre as part of regeneration proposals: Replacement of Level Crossing at High Street, Poole town centre.	Medium	9
	Transport Hubs - Accessibility improvements	Medium	12
	Transport Hubs - Bournemouth Rail and Bus connectivity	Short	13
	Transport Hubs - Poole Rail and Bus Station connectivity	Medium	14
Active travel infrastructure improvements	Consistent quality of cycle routes across the study area	Short	10
	Holes Bay walkway	Short	10
	Wayfinding Network	Short	13
	Update to Rights of Way Improvement Plan	Short	8
Public Realm	Multi-user High Street	Medium	12
	Public Realm Improvements (Reducing the need to travel)	Short	12
	Public transport improvements, including bus shelter and bus information improvements	Medium	8

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Implementing the interventions in the short to medium term will help shape a better environment for everyone. A number of recent national policies have placed a renewed emphasis on the importance of accessibility and high-quality public realm. These include the Inclusive Transport Strategy, as well as the latest version of the National Planning Policy Framework and supporting National Design Guidance. Interventions will therefore need to continue to be identified and developed alongside the Local Plan processes, which may also enable interventions to be (at least partially) funded and implemented by third parties.

Cost of Implementation

- Medium to High cost
- Multiple funding sources available
- Can be implemented as schemes, programmes of policies

Timescales for Implementation

- Medium lead-in times to factor in multiple design requirements
- Good practice examples can be easily transferred

Cycling Corridor

Why is this Topic important?

Cycling on a regular basis provides a wide range of benefits. It is a healthy, low-impact exercise that can be enjoyed by people of all ages, from young children to older adults. It is also fun, cheap and good for the environment. Cycling can improve people's physical and mental health; it can help protect them from serious diseases such as obesity, diabetes, and cardiovascular diseases, as well as reducing stress, anxiety and depression.

Riding to work, school or the shops is one of the most time-efficient ways to combine regular exercise within everyday routines. The DfT Cycling and Walking Investment Strategy sets out its aims to double the number of cycling trips and change the perception of cycling so that it is not seen as an unusual activity, but rather the norm, especially for short distance trips. In the South East Dorset area, 5% of people currently travel to work by bicycle.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Partially	Yes	Partially	Partially	Partially	Yes

What type of interventions does this Topic include?

There are currently 250km of cycling facilities across the South East Dorset area, although the level of provision varies across individual areas. Cycling Corridors have been developed using an evidence-based process to create a direct and continuous network that connects homes to jobs, schools and places of leisure. This network will encompass the study area, but also extends to towns beyond the area such as Wimborne Minster and Ferndown. The corridors will interact with the Sustainable Transport Corridors to provide more cycling infrastructure and achieve the vision for people to choose to walk and cycle for short distance journeys in a safe environment.

Table 3.7: Short Listed Cycling Interventions

Sub-topic	Intervention	Timescale*	Appraisal Score
Cycling Corridors	Cycling Corridor - C1 - Lansdowne to Christchurch	Short	15
	Cycling Corridor - C2 - Bournemouth to Ferndown	Short	15
	Cycling Corridor - C3 - Wareham to Poole	Short	15
	Cycling Corridor - C4 - Canford Heath to University	Short	15
	Cycling Corridor - C5 - Merley to Poole	Short	15
	Cycling Corridor - C6 - Holes Bay to Fleetsbridge	Short	15
	Cycling Corridor - C7 - Holes Bay Road to Creekmoor P&R	Short	15
	Development of new pedestrian Cycle Bridge: providing a link from Creekmoor to Upton Park.	Medium	11

Sub-topic	Intervention	Timescale*	Appraisal Score
Leisure cycle route infrastructure	Ferndown to West Moors Trailway	Medium	8

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

The cycle corridor interventions are outlined to be implemented in the early period of the strategy. The cycling corridors have been drawn up as a result of the evidence provided in the Local Cycling and Walking Infrastructure Plan (LCWIP) and Transforming Cities Fund (TCF) application for funding. Some of these interventions can be implemented as part of the TCF funding approval, with the others in a position to also proceed in the short term if the necessary funds are available to deliver the scheme.

Interventions can be implemented alongside local policy documents, such as the Local Transport Plan or Local Plan. Local policy (LTP3, Local Plan) demonstrates the ambition to increase cycling and improve the cycling facilities and infrastructure available in the study area. The LCWIP is aligned to DfT's strategy to create a plan of walking and cycling routes to encourage more utility and leisure cycling, and to increase the safety of these activities. The central Government ambition may also provide opportunities to implement the schemes alongside some of the 'Active Travel' topic interventions, such as an e-bike hire scheme.

Cost of Implementation

- Medium cost
- Multiple funding sources available

Timescales for Implementation

- Designs are part of TCF funding, reducing timescale of implementation.
- Corridors prioritised as a result from LCWIP and TCF funding

Safety

Why is this Topic important?

In its most literal sense, the safety theme relates to reducing the risk of direct harm or death when using South East Dorset's transport networks. In a broader sense, safety can also cover slightly less direct health impacts such as reductions in harmful local emissions such as Particulate Matter or Nitrogen Oxides. Whilst often taken for granted, safety is a principal consideration when planning any transport intervention.

As seen across the country as a whole, the number of people who are killed or seriously injured on the area's roads has reduced over recent decades. However, the rate of progress in reducing the number of people killed or seriously injured has slowed in recent years. Around 7,000 injuries were reported on the area's roads between 2013 to 2017, with 41 of these fatalities and a further 1,000 classified serious (generally involving hospital treatment). In addition, for the number of miles travelled each year, pedestrians and cyclists are disproportionately involved in the accident statistics. Although the statistics are significant enough, it is important to remember that every avoidable death or serious injury inevitably has a significant human impact for those involved.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Partially	-	Partially	-	Yes	Partially

What type of interventions does this Topic include?

Initial interventions include 20mph speed limits in appropriate locations, a ban on pavement parking and key junction improvements. When updating historic documents such as the 2011 to 2026 Dorset Road Safety Strategy, this strategy prioritises that more stretching targets be included, such as the ambition for the area to achieve Vision Zero[6] and regularly report no transport related fatalities in any given year.

The road safety improvements outlined will ultimately benefit all of us, especially when considered alongside the other themes. Safer transport environments will make them more pleasant and mean that people should no longer feel the need to cocoon themselves inside a car to stay safe. They will also be less likely to be stuck in the traffic jams typically associated with incidents and can plan journeys in the comfort of knowing that not only will they get to where they want in the same condition as when they left, but also when they expect to get there.

Table 3.8: Short Listed Safety Interventions

Sub-topic	Intervention	Timescale*	Appraisal Score
Safety policies	20mph speed limit	Short	12

[6] Vision Zero is a multi-national road traffic safety project that aims to achieve a highway system with no fatalities or serious injuries involving road traffic.

Sub-topic	Intervention	Timescale*	Appraisal Score
	Ban on Pavement parking	Short	13
	Become a Vision Zero town	Medium	10
	Dorset Strategic Road Safety Partnership	Short	7
	Roadwork user priority	Short	8
Targeted Safety Improvements	Improvements of key junctions	Short	13
	Lansdowne roundabout	Short	12
School Safety	Safe routes to Schools	Short	9
	Walk to School Campaigns	Short	8
	Enforcement of parking outside of schools	Medium	13

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

The safety theme will be prominent throughout the entire Mobility Strategy period, with many of the individual interventions being proposed during the first five years. Ensuring safe transport networks form central objectives of nearly every organisation involved in the planning and operation of the transport system. Continuing to work towards a safer transport network will therefore continue to be supported in policy terms.

Cost of Implementation

- Medium cost
- Multiple funding sources available
- Can be implemented as schemes, programmes of policies

Timescales for Implementation

- Individual interventions can be implemented short term, but full effects will be seen in the medium term

Sustainable Transport Corridor

Why is this Topic important?

A Sustainable Transport Corridor aims to benefit sustainable and active travel users. They have the opportunity to provide attractive, high-speed direct bus connectivity and improve pedestrian and cycle infrastructure (aligned with LCWIP).

To build a more inclusive and connected transport network, there is a need to tackle the challenges that currently impact travel. With high levels of traffic congestion and harmful air pollution levels, there is a sense of urgency to tackle these issues to improve public health. Buses get caught in this congestion, resulting in longer journey times for bus users. There is also variance in the provision of services, especially further from the urban centres. Greater equality is needed to allow residents and visitors across the whole of South East Dorset to travel by connected routes and comparable frequencies of services.

What type of interventions does this Topic include?

Without significant investment in walking, cycling and bus infrastructure, it will be difficult to encourage people to drive less. The Transforming Cities Fund aims to improve intra-connectivity by investing in public and sustainable transport to make it quicker, easier and safer for people to travel around by bus and active modes. To help people travel across and along key transport routes, a series of corridors have been identified connecting key employment and residential areas of the study area. The corridors will give buses priority, through infrastructure improvements, to achieve journey time benefits for users. They are also intended to provide safe and coherent routes for pedestrians and cyclists, with full segregation from cars, where possible.

Table 3.9: Short Listed Sustainable Transport Corridor Interventions

Sub-topic	Intervention	Timescale*	Appraisal Scores
Changes to public highway	Removal of on-street parking on key bus routes	Medium	7
	Bus and Cycle priority on main trunk routes	Medium	14
Sustainable Transport Corridor	Sustainable Transport Corridor - S1 - Poole to Christchurch	Medium	17
	Sustainable Transport Corridor - S2 - Bournemouth to Ferndown/Wimborne	Medium	16
	Sustainable Transport Corridor - S3 - Wimborne to Christchurch (Bournemouth)	Medium	16
	Sustainable Transport Corridor - S4 - Wallisdown Road/ Talbot Avenue	Medium	16

Sub-topic	Intervention	Timescale*	Appraisal Scores
	Sustainable Transport Corridor - S5 - Poole to Ferndown	Medium	16
	Sustainable Transport Corridor - S6 - North Poole/ North Bournemouth	Medium	16
	Sustainable Transport Corridor - S7 - Poole to Wimborne	Medium	16
	Sustainable Transport Corridor - S8 - Broadstone to A349	Medium	16

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

The concept of a Sustainable Transport Corridor was developed as part of the TCF funding. The funding allows investment into a programme of sustainable travel interventions, transforming local travel options and connecting local people to jobs and education. The awarding funding will cover only some of the sustainable transport corridors over the next three years; corridors S5 and S6. The remaining sustainable transport corridors would be delivered within the middle of the strategy.

Cost of Implementation

- Medium to High cost
- Multiple funding sources available

Timescales for Implementation

- Long lead-in times as detailed design is required.
- Implemented based on priority

Bus

Why is this Topic important?

Public transport is an essential part of tackling both pollution and congestion, and travelling by public transport needs to be an easy choice. Not everyone in the area has access to a car, nor is able to make their journey by foot or by bicycle. Currently, rail travel is limited to east-west movements, and therefore, buses are an essential form of travel for many journeys. Buses are the most space-efficient road passenger vehicle and have a critical role in decarbonising transport. More people need to travel by bus to reduce the number of cars on the road and improve air quality.

Bus travel within the region has bucked national trends, with an increased patronage observed since 2010. There are excellent bus connections between Poole and Bournemouth; however, services outside the main urban areas are limited and service times infrequent. This has led to declining bus usage and services as bus providers struggle to invest in these areas. One of the benefits of buses is that they connect people of all ages from one place to another; without them, social isolation will occur. This is a particular concern for the ageing population in the area, many of whom rely on bus travel to make their everyday journeys as driving becomes more challenging later in life.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Yes	Yes	Partially	Partially	-	Yes

What type of interventions does this Topic include?

The bus interventions within this Strategy are focused around making bus travel smoother and more reliable. This includes readily available timetable information via real-time and travel apps. One of the interventions within this Strategy is to see express journeys in and out of the study area, connecting the outlying conurbations to the main urban areas in Bournemouth and Poole. A high-quality rapid bus service, accompanied by bus infrastructure provided as part of the Sustainable Transport Corridors, will provide a quicker and attractive alternative to driving, allowing a less stressful and more productive journey. Cheaper and integrated smart ticketing will also add to the appeal of bus travel.

Good transport links are important for everyone, especially when first forming travel habits. The primary method of travelling to school is by car. These drop-off and pick-up trips contribute to the congestion and poor air quality around schools. Providing free bus travel to school children is a solution for far lesser vehicles on the road, reduced accidents and improved air quality.

Table 3.10: Short Listed Bus Interventions

Sub-topic	Intervention	Timescale*	Appraisal Scores
Improved frequencies accessibility	Demand Responsive Transport	Medium	9
	Improve frequency of buses on main artery routes	Medium	11
	Improving access to Bournemouth Airport, the Port of Poole and Portland Port	Medium	9
Bus partnerships	Bus/transport partnerships	Medium	10
	One bus franchise	Medium	8
Improving accessibility	Provision of free bus travel to school children	Medium	11
	Express Bus services to Verwood, Ferndown, West Moors, Wimborne, Bournemouth Airport and Ferndown and Bournemouth Airport business parks	Medium	9
	Express bus service for journeys in and out of the study area	Medium	8

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Future of Mobility policy places great emphasis on the importance of mass transit systems in any future transport network, even in scenarios whereby significant technological advances are made. There is also a wide range of legislation promoting the use of bus partnerships and improvements aimed at improving bus services for passengers, with the Government intending to release the UK's first long-term bus strategy in the coming months. At a local level, interventions which can successfully increase bus use can play a significant role in supporting local social and environmental objectives, and can be completed during the middle of the Strategy period.

Cost of Implementation

- Medium cost
- Funding sources available

Timescales for Implementation

- Medium lead-in times
- Requires partnership with bus companies

Financial Measures

Why is this Topic important?

Our transport system is a finite resource, with congestion being a visible consequence of over demand. Congestion has many negative impacts for individuals and society, including delays, costs, wasted fuel and poor air quality. The objective of financial measures is not to price drivers off the roads, but to encourage them to consider *how* and *when* they travel; perhaps at a different time of day, on a different route, or using a different mode of transport. They might even choose not to drive at all on some occasions.

Widespread congestion and delays are experienced by travellers across the area. The ready supply and relative low cost of parking reinforces the decision to drive as the cheap and convenient option. This makes it difficult to for other modes, such as buses or cycling, to compete. Across the area there is generally adequate parking available; however, parking demand can exceed capacity at key trip generator locations in the centres and along the coast, especially at weekends and holiday periods. In some cases, the issue is not a lack of supply, but a desire by drivers to park at their immediate destination even when alternative parking may be available nearby.

What type of interventions does this Topic include?

Road user charging, also known as congestion charging, involves charging road-users for their use of road space within a defined area and/or during a particular time period. It seeks to influence the demand for road-use by increasing the cost of travelling by road at certain times, in certain areas and/or along certain routes. These changes can be linked with routing and junction improvements, enhanced public realm and/or new and enhanced cycling and public transport corridors identified elsewhere in this strategy.

Implementing a dynamic charging regime with defined demand-based parameters will address specific traffic congestion experienced in the area, directly benefitting all travellers, the environment and the economy. Revenues raised can be used to directly fund other transport measures. However, these measures represent significant change for road users, and it is critical that consultation takes place. Proposals will include phased implementation linked to the delivery of viable travel alternatives from the strategy.

Table 3.11: Short Listed Financial Interventions

Sub-topic	Intervention	Timescale*	Appraisal Scores

Parking Charges	Increase cost in parking	Medium	11
Charging schemes	Congestion Charging	Medium	12
	Dynamic / demand-based pricing	Medium	7

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Achieving the right balance between supply and demand is key to managing demand for car travel. All car journeys begin and end with parking. Managing parking demand is therefore fundamental, requiring a structured and consistent approach to the availability, regulation and pricing of parking across the area. This will require working with partners and public transport operators in the short and medium term to establish a positive association between the cost of parking and public transport fares and ensure that public transport is a more competitive and attractive mode of transport.

Cost of Implementation

- Medium cost
- Revenue funded
- Can be implemented as schemes, programmes of policies

Timescales for Implementation

- Medium timescale
- Good practice examples can be easily transferred

Interchange

Why is this Topic important?

The Interchange theme broadly recognises that, for many journeys, people do not solely rely on getting directly from A to B using the same mode of transport. For example, if somebody looks to get the bus to work or to go shopping, they generally have to walk a reasonable distance at either end, often accompanied by a period of time in an environment whilst they wait for the bus. These environments are often only a small fraction of journeys, but they are particularly important. They also serve as important gateways to the area and form first impressions for those arriving from further afield by bus or train. If a bus stop is exposed to bad weather or does not provide any live timing information whilst people are waiting it can negatively impact their experience and make them less likely to travel that way in the future if an alternative is available.

For those with luggage or lacking physical mobility, the stairs that need to be climbed to get to the other train platform mean makes a whole trip extremely difficult or impossible. The majority of stations in the area lack step free access to both platforms and whilst a large number of the bus stops are of a good standard, it is not the same for everyone. Many of the interchanges also lack facilities which could help people to reach them using other means, such as cycling.

What type of interventions does this Topic include?

The interchange interventions generally consist of physical infrastructure improvements at our main transport hubs or stations. The interventions are proposed for the middle period of the strategy, so would be delivered within the medium term. This phasing reflects the scale of funding and development work required to provide the most beneficial changes but there is potential for individual interventions to be bought forward if the opportunity arises. For example, this acceleration may be as a result of wider public realm improvements or associated with the delivery of development sites.

Overall, the interventions outlined should leave an interchange environment that works for everyone. The interchange quality at the end of journeys will be as good as at the start, meaning that people can have confidence to complete their whole journey without any variability arising from poor weather or the additional items that people may need to carry from time-to-time.

Table 3.12: Short Listed Interchange Interventions

Sub-topic	Intervention	Timescale*	Appraisal Scores
Improved accessibility to rail stations	Improved accessibility at Branksome Station for all passengers.	Medium	10
	Improved accessibility at Christchurch Station for all passengers.	Medium	10
	Improved accessibility at Hamworthy Station for all passengers.	Medium	11
	Improved accessibility at Hinton Admiral Station for all passengers.	Medium	11
	Improved accessibility at Parkstone Station for all passengers.	Medium	10
	Improved accessibility at Pokesdown for all passengers.	Medium	10
New transport hub	New bus station and associated off-site bus depot element of the Heart of Poole development scheme	Medium	11
	Bournemouth Airport interchange / transport hub	Medium	10
	Edge of Town Park & Ride	Medium	7
	Park and Ride	Medium	8
	Transport Hubs - Creekmoor Park & Ride Enhancement	Medium	10
	Transport Hubs - Electric bus charging facilities	Medium	8
	Transport Hubs - Lansdowne (Bournemouth) Travel Interchange	Medium	13
	Relocated Poole station that has better, safer accessibility to the town.	Long	10
	New Railway Station at Talbot Heath to serve the two Universities	Long	

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Accessibility improvements to interchanges are proactively supported by the government's Inclusive Transport Strategy and have the potential to leverage micromobility improvements desired by the Future of Mobility grand challenge.

Given the breadth and cost of changes that would be required to meet such the interchange ambition, many of the interventions are generally longer-term. However, early scoping work would help to identify more detailed improvement areas, which could be delivered incrementally throughout the strategy period.

Cost of Implementation

- Low cost
- Multiple funding sources available
- Can be implemented as schemes, programmes of policies

Timescales for Implementation

- Short lead-in times as limited design requirements
- Good practice examples can be easily transferred

Rail

Why is this Topic important?

The rail theme covers the movement of people and goods from the perspective of shorter, local trips within the area or for those longer trips to further afield. Improved rail connectivity will also play a key role in reducing the negative impacts of congestion if the offering can be anywhere near as good, or better, than an equivalent trip by car. At present, rail travel is limited to movements between the east and the west for many users. This means that accessing the rail network is difficult for many, with travel to certain important destinations often infrequent or relatively slow. There have been a number of high-level studies focussing upon potential new stations or strategic corridor improvements in recent years, although the complexity of catering for both short and long-distance journeys means that benefits for one aspect are often counter acted by negative impacts for the other.

Efficiency	Emissions	Wellbeing	Placemaking	Safety	Sustainable Modes
Yes	Yes	-	-	-	Partially

What type of interventions does this Topic include?

Local level rail interventions include the creation of a light rail rapid transport system to better serve areas which currently have poor rail coverage and also improve connectivity to current rail systems. Current rail systems are also proposed to improve connectivity within the Dorset region, with more services between the smaller stations in the area alongside the aspiration to reduce journey times to locations such as Southampton and London.

These interventions are also designed to work alongside other themes, such as the interchange theme, which aim to improve the accessibility to and within our rail stations. When combined, these interventions should improve our rail experience throughout our journeys and not just the time we spend on the train.

Table 3.13: Short Listed Rail Interventions

Sub-topic	Intervention	Timescale*	Appraisal Scores
Improved performance of existing services	Improved journey times and increased capacity on the West of England Line.	Long	10
	Improved performance and reliability on services through Dorset and the conurbation.	Medium	10
	Improved Sunday rail service frequency between Weymouth, Bournemouth and London.	Medium	10
	More frequent rail service between Poole and Bournemouth	Long	11
	Reduce journey times on services between Weymouth and London	Long	8

Sub-topic	Intervention	Timescale*	Appraisal Scores
	Reduced London journey time to circa 1 hour 45 mins from Poole / 1 hour 30 from Bournemouth[7]	Long	10
	Direct Train between Poole and Portsmouth	Long	9
Political relationship	Rail: The Authorities will continue engagement with Network Rail and the Train Operators to develop a pipeline of schemes and improvements, including opportunities to open new stations in Dorset and explore the benefits and issues associated with relocation of others	Short	10
New services	Development of Dorset Area Rapid Transit system	Long	13
	New journey opportunities from south Dorset to major destinations through the provision of either additional train services or improved interchange at appropriate stations. Journey times should be comparable with road.	Long	11
	New/ improved journey opportunities from Wool/ Wareham/ Holton Heath to Christchurch/ Bournemouth/ Poole (Dorset Metro)	Long	12
	New/ improved journey opportunities in areas not served by rail (north Bournemouth/ north Poole/ Ferndown/ Bournemouth Airport/ Verwood/ Wimborne	Long	13

**Timescales defined as Short (0-5 years), Medium (6-10 years) and Long (11-20 years)*

When and how can interventions be implemented?

Given the significant funding requirements and scheme development times associated with rail interventions, the rail specific timings have generally been placed later in the SEDUMS period.

Providing new and better opportunities for the future is one of the key priorities for any rail intervention to progress through central Government funding processes. This means that the Local Industrial Strategy's sustainable connectivity and mobility foundation aligns with the central Government commitment to use rail travel to support growth through the Rail Network Enhancement Pipeline. The government's Rail Strategy also supports this growth objective, alongside the intent to provide a better deal for customers. The relative carbon efficiency of rail (per person) and use of different infrastructure could also help us to support central government ambitions with regards to the Clean Air Strategy and Decarbonising Transport, as well as our local Climate Emergency declarations and Council Plans.

Cost of Implementation

- High cost
- Multiple funding sources available
- Can be implemented as schemes, programmes of policies

Timescales for Implementation

- Long lead-in times following GRIP process

[7] Network Rail initiated a study to consider the possibility of this service Autumn 2020.

4. Transport Modelling Overview

4.1 Introduction

Transport modelling has been used as a means of testing the potential impact of the Strategy on the area's transport networks. The transport modelling approach has been based upon guidelines issued by the Department for Transport, which will also have to be followed when individual interventions are further developed as part of scheme development or funding applications. The use of a transport model means that potential interventions can be represented virtually alongside the existing transport network and/or the number of people looking to use the different aspects of the network can be adjusted.

This section summarises how the transport modelling approach has been developed, including the choice of transport model and how uncertainty in predicting the future has been accounted for in the different growth scenarios. The types of information the model can provide to help understand the potential impacts resulting from the strategy are then introduced. More details can be found in the full modelling report document (Appendix D).

4.2 Modelling Review

Developing new transport models requires a significant amount of time and financial resources to ensure that they can be considered sufficiently representative of observed conditions and used for forecasting future changes. Several existing transport models from across the study area were available for the study to use, as developing a new model was not considered proportionate. However, as recommended by Department for Transport guidance, it is important to analyse the capabilities of a transport model to ensure that it is fit for purpose. The following models were therefore reviewed to determine which should be used to develop the evidence base for the study:

- South East Dorset Multi-Modal Transport Model – Highway, Public Transport and Variable Demand Model covering the study area;
- Bournemouth Town Centre VISSIM Model - Micro-simulation model of Bournemouth Town Centre and the A338;
- A348 Ringwood Road Paramics Corridor Model – Micro-simulation model representing the A348 and A3049 corridors;
- Poole Town Centre Paramics Model - Micro-simulation model of Poole Town centre developed to assess re-generation proposals; and
- Christchurch Paramics Model - Micro-simulation model of the Christchurch area.

As a result of these reviews, it was concluded that the most appropriate model to use as an evidence base for the study was the South East Dorset Multi-Modal Transport Model (SEDMMTM). The SETMMTM was selected because it has a good area of spatial coverage and the multi-modal nature of the model meant that was suitable for assessing the majority of the potential Strategy interventions. The model also demonstrated a good level of compliance against Department for Transport guidelines. Conversely, the limited area of coverage and single mode nature of the micro-simulation models means that they would not be suitable for assessing the majority of the interventions.

4.3 Defining Growth Scenarios

Introduction

When modelling the potential situation many years into the future it was important to ensure that specific growth scenarios were defined for this study. This was to ensure that the anticipated growth in general travel demand accurately reflected the local population, thus enabling a more realistic assessment of the potential impacts of interventions. The key objective was to avoid producing growth forecasts that significantly under-estimated or over-estimated potential demand across the study area.

Annual Average Daily Traffic counts for 2012 and 2017 (the year that the model represents), in the South East Dorset area have been compared to generate a factor representing recent changes. These observations have been compared against national forecasts for travel demand for the same period. The “average day” national forecast factor for 2012-2017 growth has been extracted from the National Trip End Model (NTEM) using the TEMPro software. Table 4.1 presents these factors.

Table4.1: Observed vs Predicted growth rates, 2012-2017

Observed traffic growth from counts: 2012 - 2017	1.0626
Predicted traffic growth from TEMPro: 2012 - 2017	0.976

Observed growth between 2012 and 2017 in the South East Dorset area was positive and did not match the decrease predicted by NTEM. This suggested that there was a need to develop a bespoke growth forecasting methodology for the South East Dorset area. This methodology therefore accounted for both the trends predicted by NTEM and the historical observed growth.

Adjusted Core Growth

Figure 4.1 presents the Core Growth scenario for the South East Dorset area. This 'Core' growth scenario has been used for the main impact analysis. The growth is forecast as a smooth curve, matching the TEMPro growth at the start and end of the modelled period, and with higher trip levels than TEMPro for the intermediate years. Higher trips levels in the intermediate years reflect the historical trend of the Dorset area experiencing higher growth than that predicted by NTEM.

Key development proposals have also been incorporated into the core growth scenario; this was incorporated into the low and high growth proposals as outlined below. This means that the more localised impacts of new development can be represented, as opposed to assuming that travel demand will grow evenly across the whole of the area.

High and Low Growth

Department for Transport 'Transport Appraisal Guidance' (TAG) also outlines that alternative high and low growth scenarios are necessary to account for forecasting uncertainty. These forecasts are based upon increases and reductions to the previously outlined 'Core' scenario and the observations in the 2017 model. Figure 4.2 illustrates the High and Low Growth scenarios against the Core.

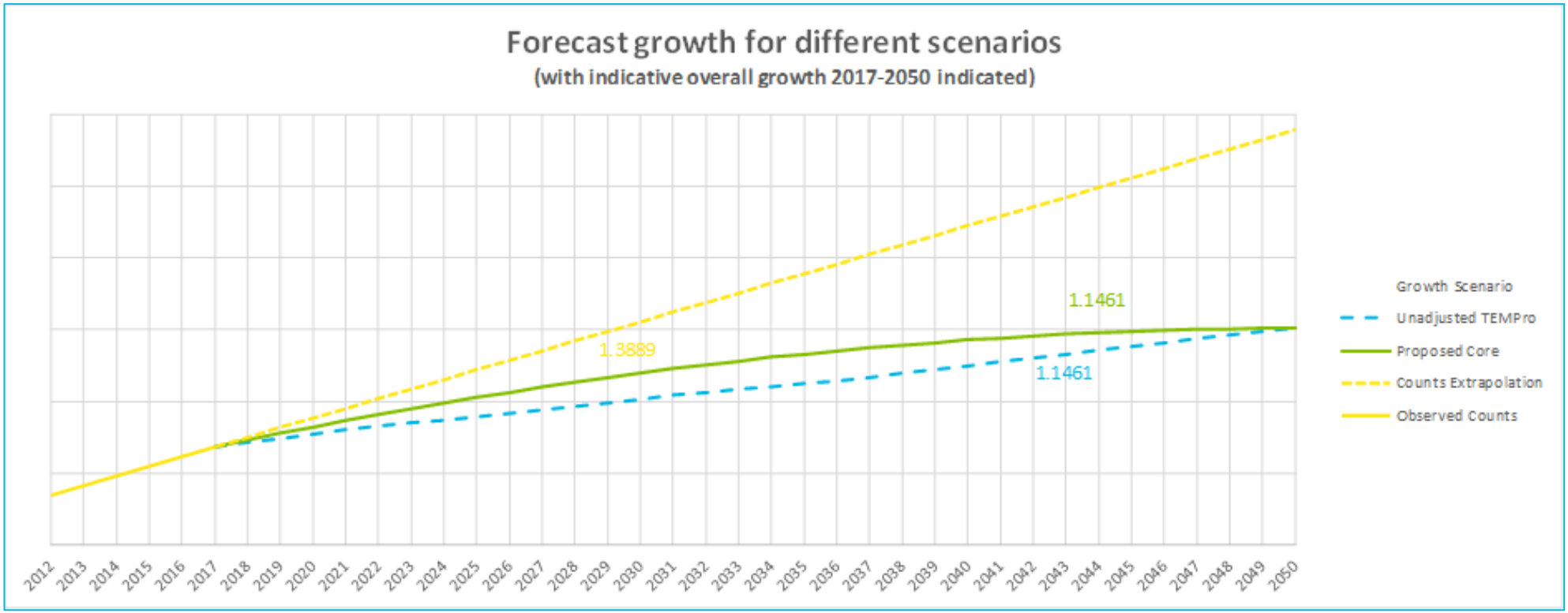


Figure 4.1: Proposed Core Growth Scenario

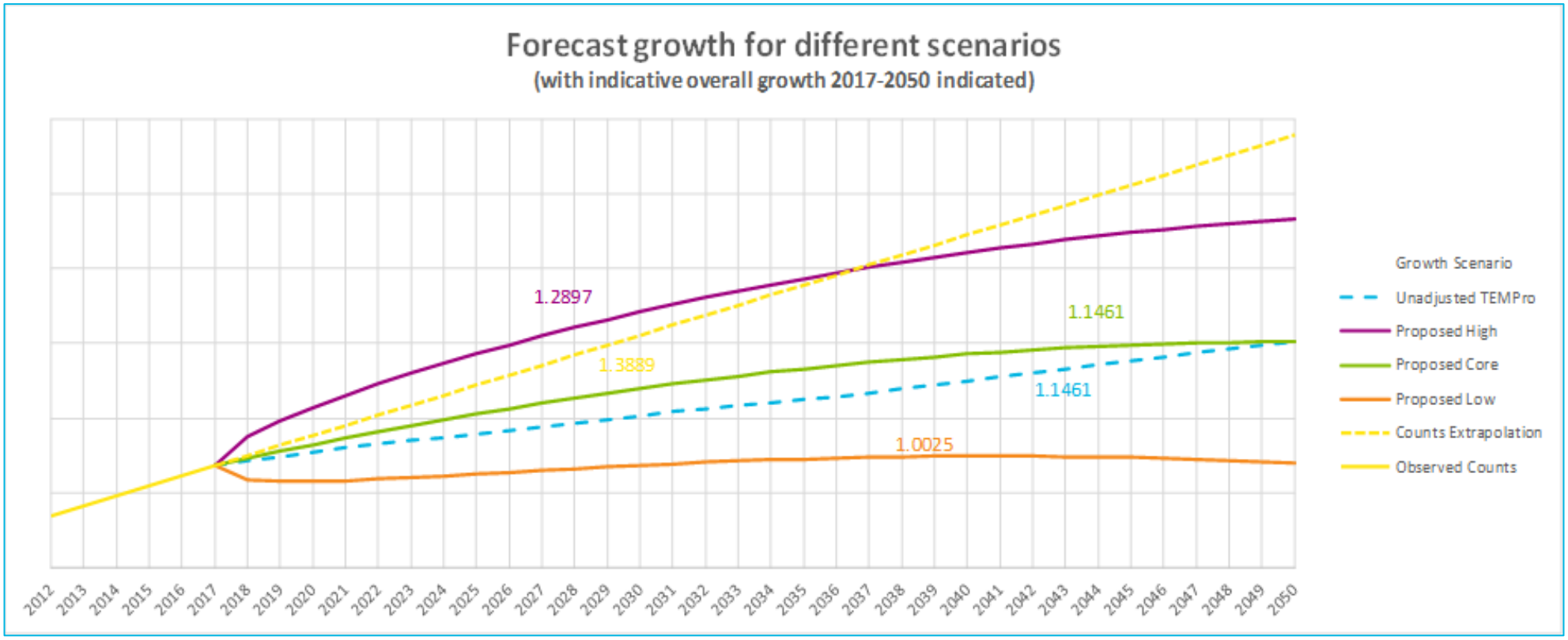


Figure 4.2: Proposed High and Low Growth scenarios, relative to the Core Scenario

4.4 Explanation of Model Outputs

A consistent set of model outputs has been produced for each modelled scenario to enable comparison between the scenarios. This report focuses upon the analysis of the following outputs:

- The number of vehicles on the roads;
- The number of public transport passengers;
- Highway delays; and
- Journey times along the main corridors in the region (as shown in Figure 4.3).

Figure 4.3: Journey Time Routes on Key Corridors

The full model outputs, reported in the full modelling report (Appendix D), also include measures of demand to road capacity, a variety of queue types, the amount of time spent without traffic, average speed and total distance travelled within the model.

Outputs have been produced for the following modelled time periods:

- Morning peak hour (0800-0900) – AM;
- Average Inter-peak hour (1000-1600) – IP; and
- Afternoon peak hour (1700-1800) – PM.

A summary of the model outputs is provided in Section 5, with full results in the full modelling report (Appendix D). The areas shown in Figure 4.4 have been defined for the area-based model outputs.

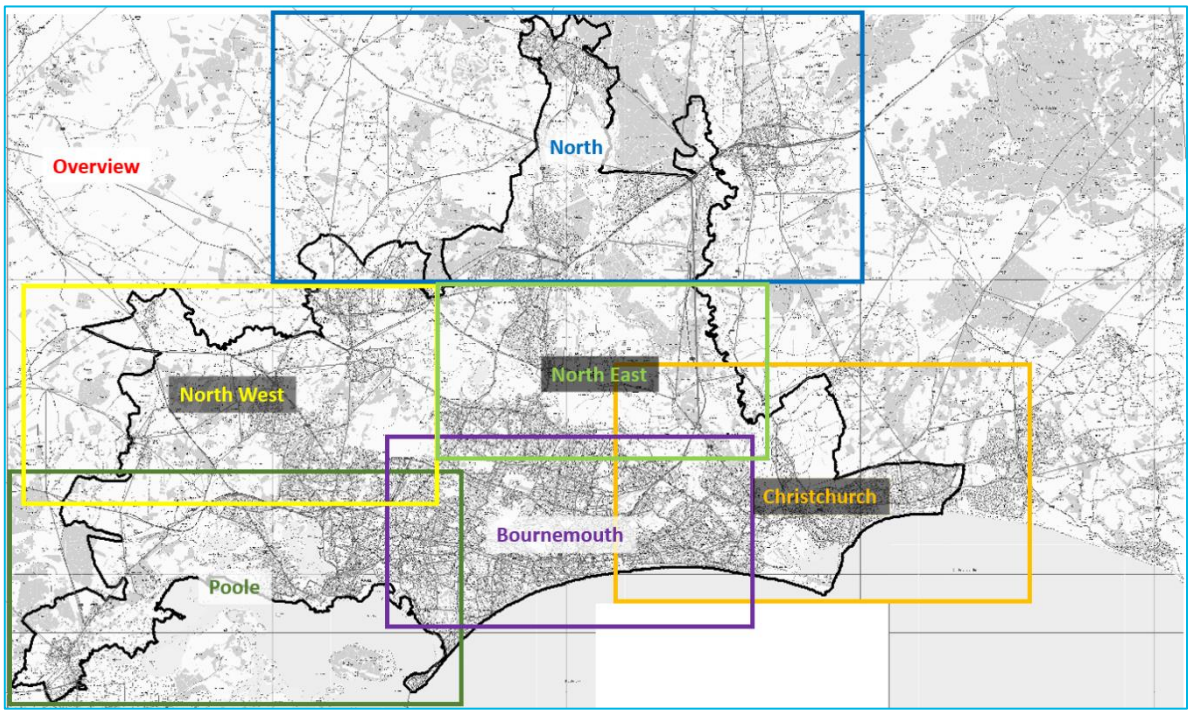


Figure 4.4: Model Output Areas (Overview; Bournemouth; Christchurch; Poole; North; North-East; North-West)

4.5 Modelled Years

Another important consideration in the use of transport models is the future years for which forecasts can be generated. Due to the extensive work that is required to establish such year it was not possible to dictate these for the SEDUMS commission. The years already established within the South East Dorset Multi-Modal Transport Model therefore had to be used, which were:

- 2023;
- 2031; and
- 2039.

4.6 Model Limitations

The model on which this study has been built to comply with TAG standards, therefore it is considered robust. Analysis has been undertaken to ensure that all the transport models used in the study are TAG compliant in terms of model convergence. However, it should be stated that the model is not completely fit for purpose to effectively model all interventions. Professional judgement has been used to model the interventions and reasons as to why some interventions have not been modelled are detailed in Annex D of the Modelling Report in Appendix D. It should be noted that any modelling outputs should only be taken as a strategic guide to the impact of the interventions on across the BCP Council area.

The limitations of the model include:

- The way in which larger junctions have been represented;
- How the number of vehicles impacts the speed that vehicles would travel along a section of road without junctions;
- How car parks and parking charges have been represented;
- How freight is modelled;
- Longer distance public transport trips from outside of the area;

- How public transport fares change over time;
- How many people can fit onto specific public transport services, including the subsequent impacts on travel choices and network capacity detail; and
- How active travel trips are represented.

5. Scenario Testing

5.1 Overview

This section sets out the scenarios that have been tested using the selected transport model. This includes 'Do-Minimum' scenarios for the three time periods (AM, IP and PM) including background growth for the agreed modelled years. Do-Something scenarios of Mobility Strategy interventions have also been tested, again for the three time periods and across the defined modelled years. Details of the interventions included within the Do-Something scenarios are provided in Section 5.3.

Full results for each scenario are provided in the modelling report (Appendix D). The high and low growth scenario results are provided in Annex G of the modelling report.

A high level summary for the SEDUMS area of the following key outputs are provided in Figure 5.1 to Figure 5.6 for the Do Minimum (DM) and Do Something (DS) scenarios, across the forecast years and growth scenarios.

- Highway Total Travel Time (Vehicle Hours)
- Highway Total Travel Distance (Vehicle Kms)
- Highway Average Speed (km/h)

The graphs indicate that the strategy offers an opportunity to reduce highway travel times and travel distance, whilst increasing average highway speeds. The remainder of this section presents more detailed outputs for the Do Minimum and Do Something scenarios.

Highway Travel Time (Vehicles Hours)

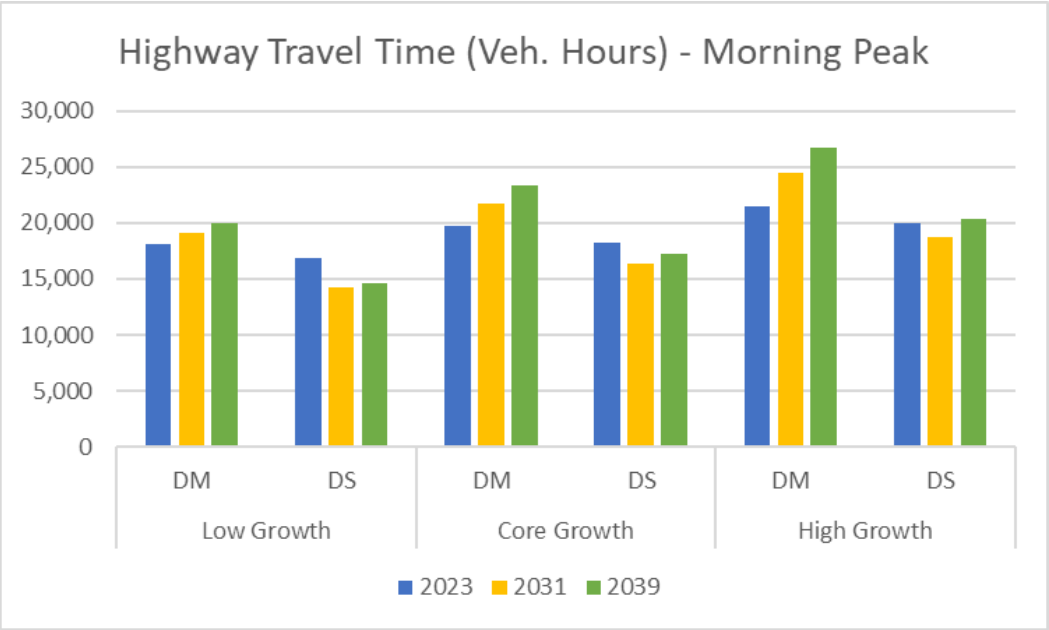


Figure 5.1: Highway Travel Time (Vehicle Hours) – Morning Peak Hour (0800-0900)

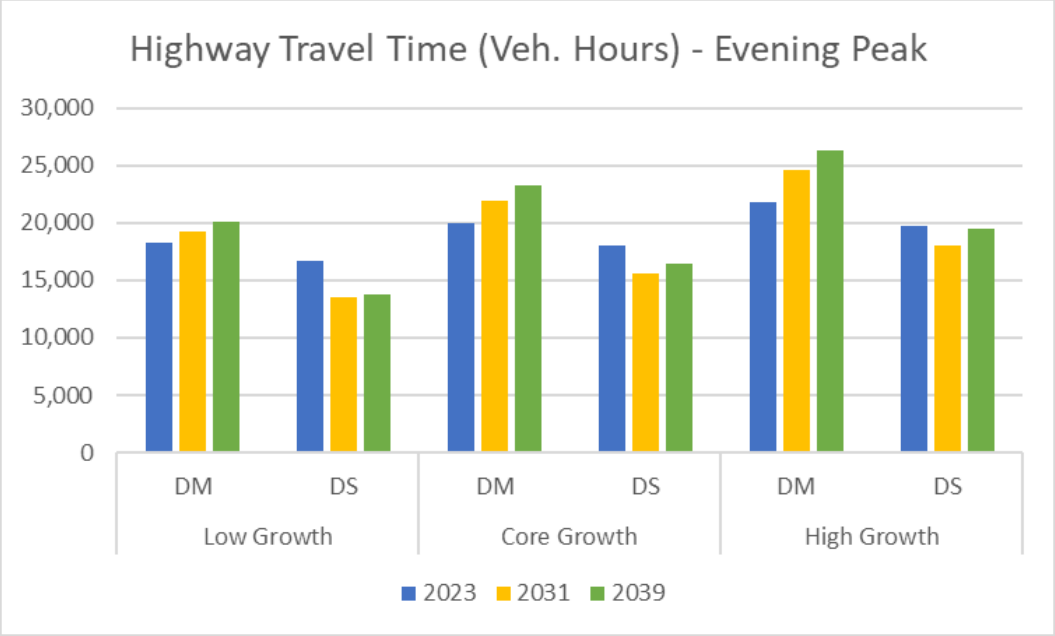


Figure 5.2: Highway Travel Time (Vehicle Hours) – Evening Peak Hour (1700-1800)

Highway Travel Distance (Vehicles Kms)

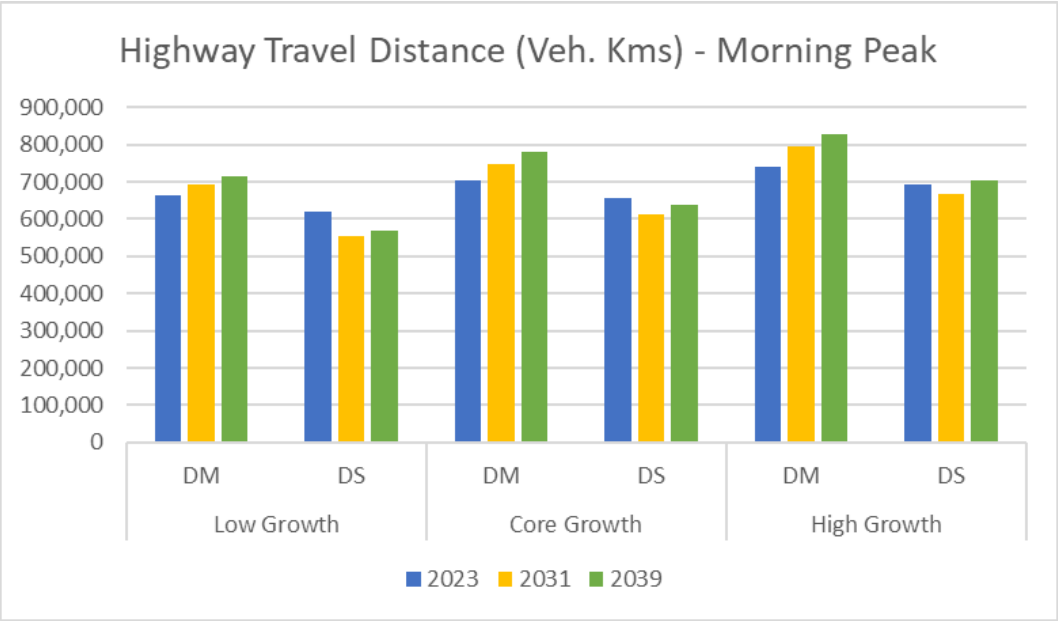


Figure 5.3: Highway Travel Distance (Vehicle Kms) – Morning Peak Hour (0800-0900)

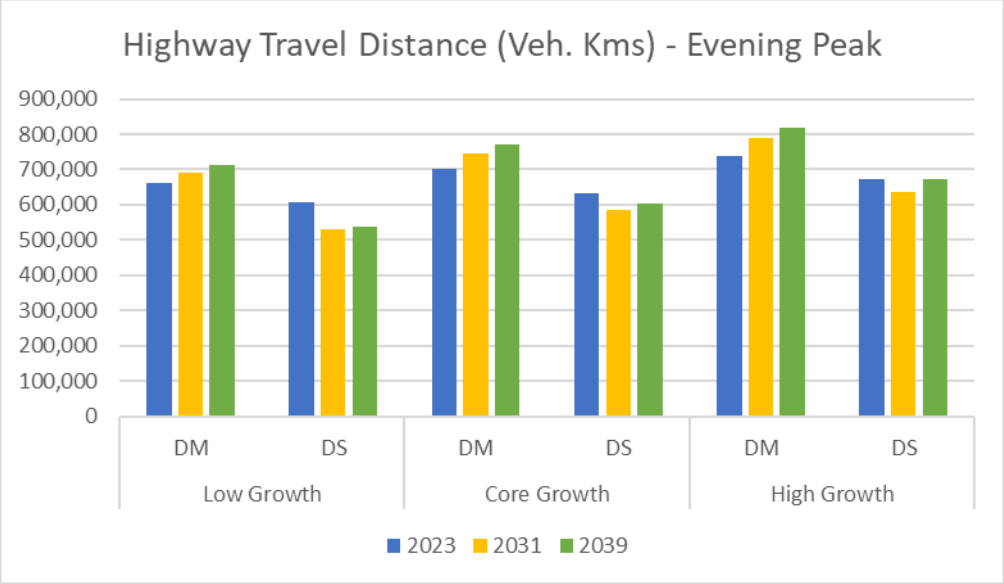


Figure 5.4: Highway Travel Distance (Vehicle Kms) – Evening Peak Hour (1700-1800)

Highway Average Speed (Km/h)

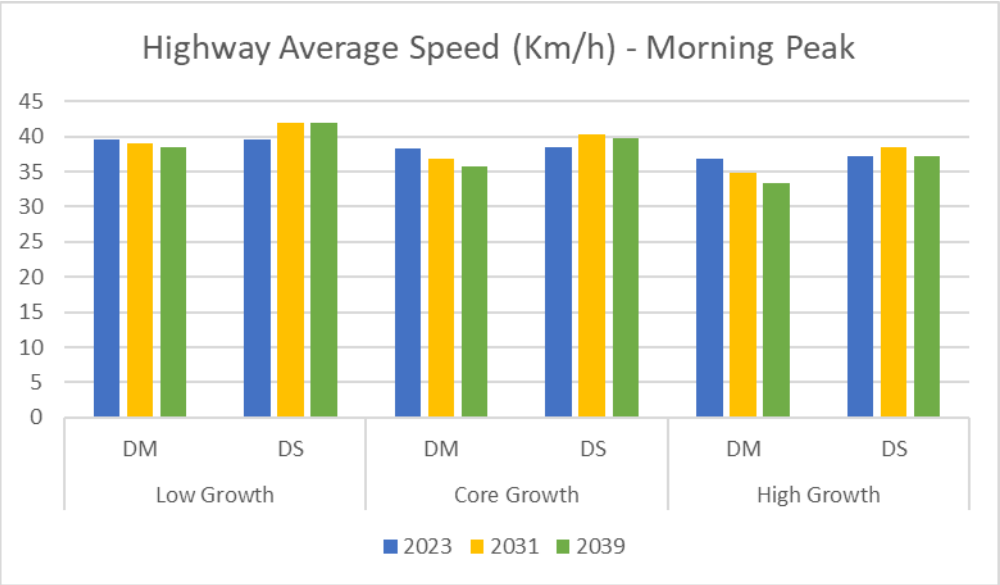


Figure 5.5: Highway Average Speed (km/h) – Morning Peak Hour (0800-0900)

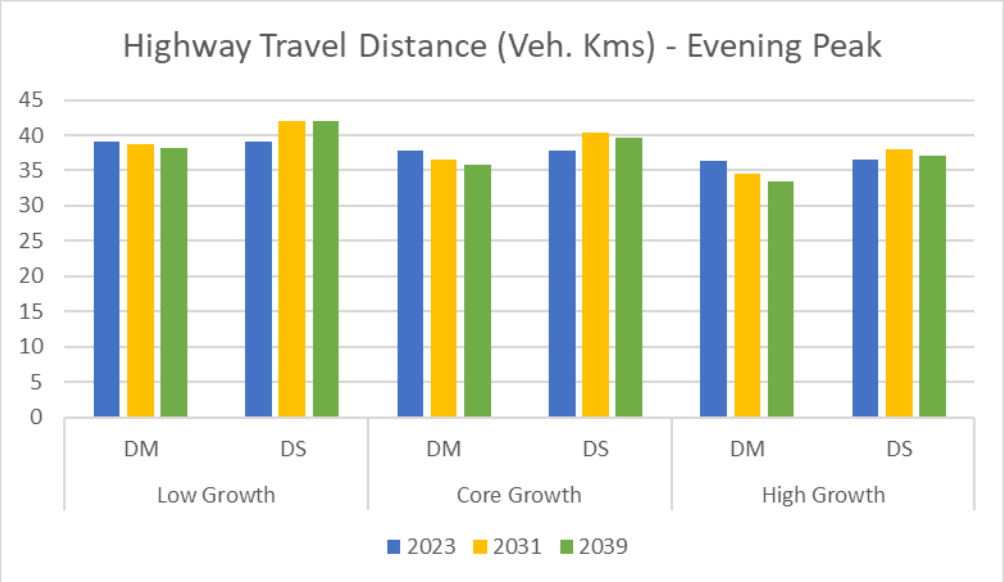


Figure 5.6: Highway Average Speed (km/h) – Evening Peak Hour (1700-1800)

5.2 Do-Minimum Scenarios

The 'Do-Minimum' scenarios represent a prediction of how the transport network may function in the future but in the absence of the Mobility Strategy. It includes a small number of transport improvements which are likely to occur regardless of the strategy, such as those associated with housing developments or with funding committed before the end of 2019 (when the model was developed). The Do-Minimum therefore provides an important starting point from which we can measure how much the strategy might change the transport network functions, if other background influences on travel remain the same.

For each of the three forecast years, several outputs have been produced and are outlined in this section. Full result outputs and analysis can be found in Section 2 of the full modelling report (Appendix D). A further layer of model output detail can also be found within the full modelling report in the following locations:

- More detailed area maps Annex A
- Highway model statistics Annex B
- Do-Minimum journey times Annex C

Do-Minimum Model Analysis: Morning Peak Period

2023 Analysis

In the 2023 morning peak period, there is predicted to be a wide variety in where people travel to and from, and how they travel (by car Figure 5.7, by bus 5.8 and by rail 5.9). The greatest magnitude of trips are generally along the routes with the highest capacity, such as the A338 into Bournemouth or A350 into Poole, or where several key external routes into the urban centres merge. Bus and rail modes are still forecast to be well utilised, albeit at significantly lower levels than cars (about one-third of total trips, by distance). This relatively low public transport use is most prevalent in, but not exclusive to, those areas not well served by bus or rail services.

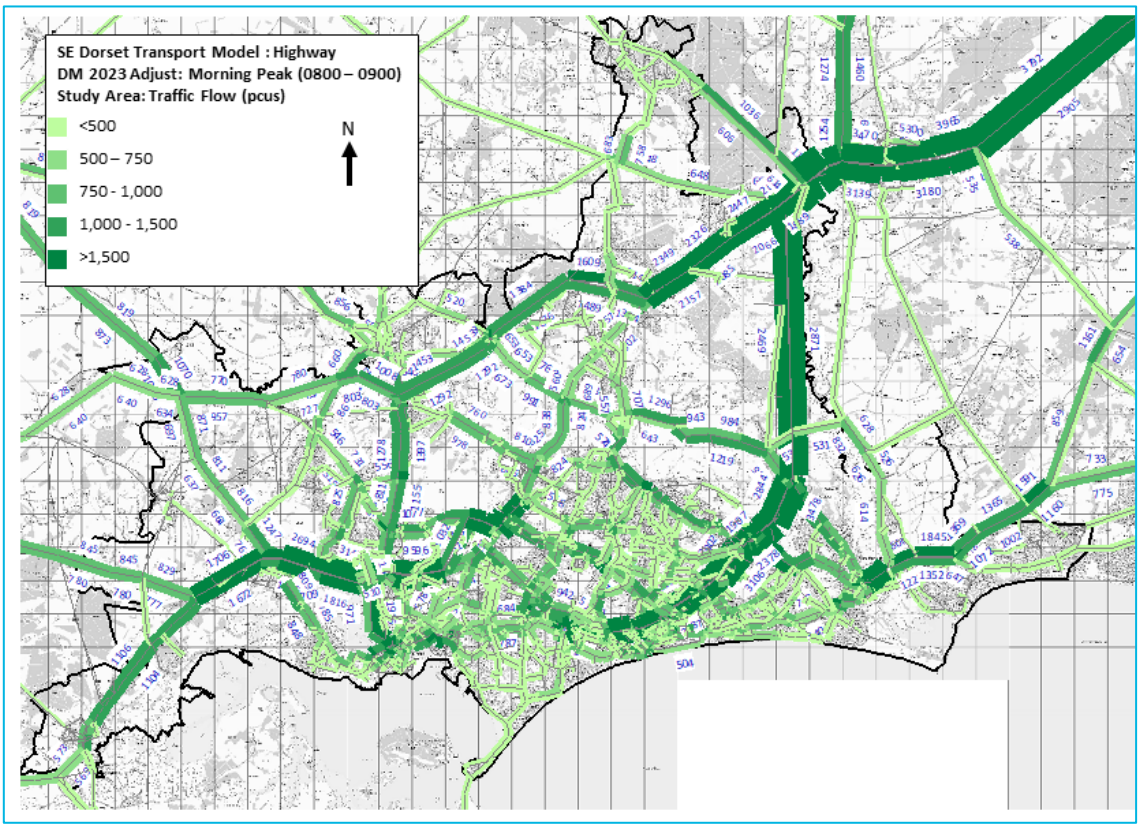


Figure 5.7: Highway Flows (actual) – 2023 Do Minimum, Morning Peak

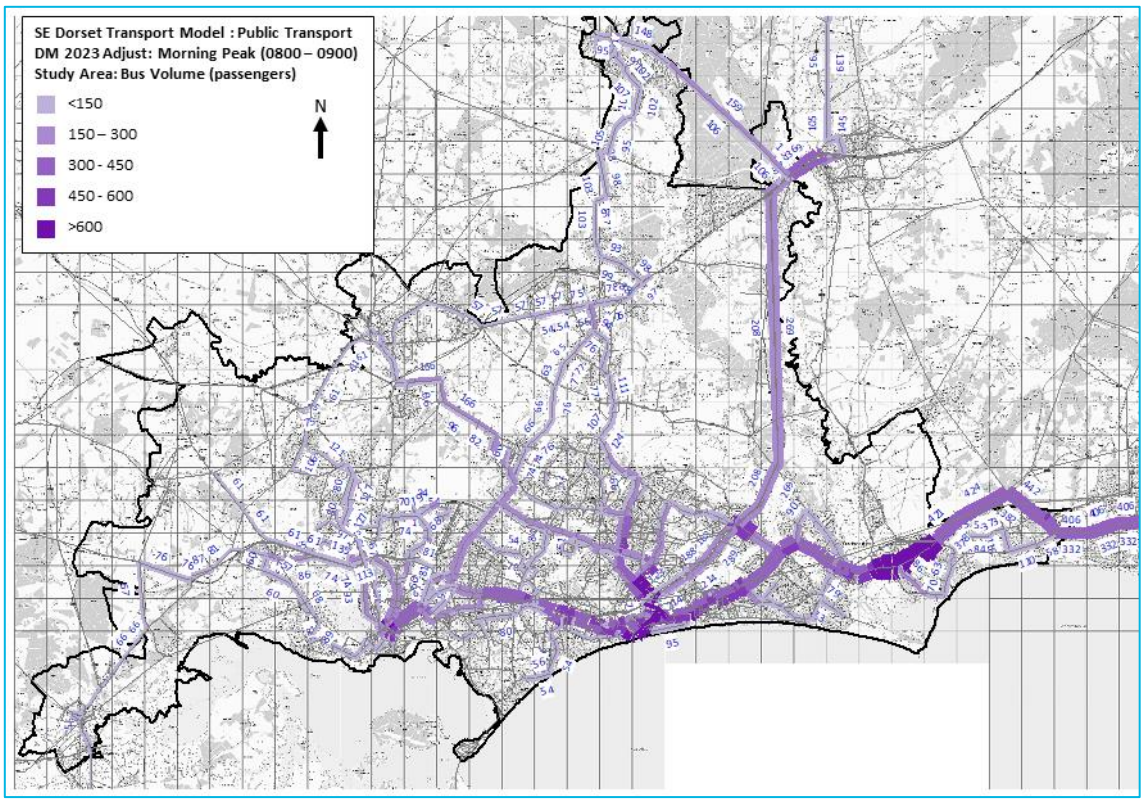


Figure 5.8: Bus Flows (passengers) - 2023 Do Minimum, Morning Peak

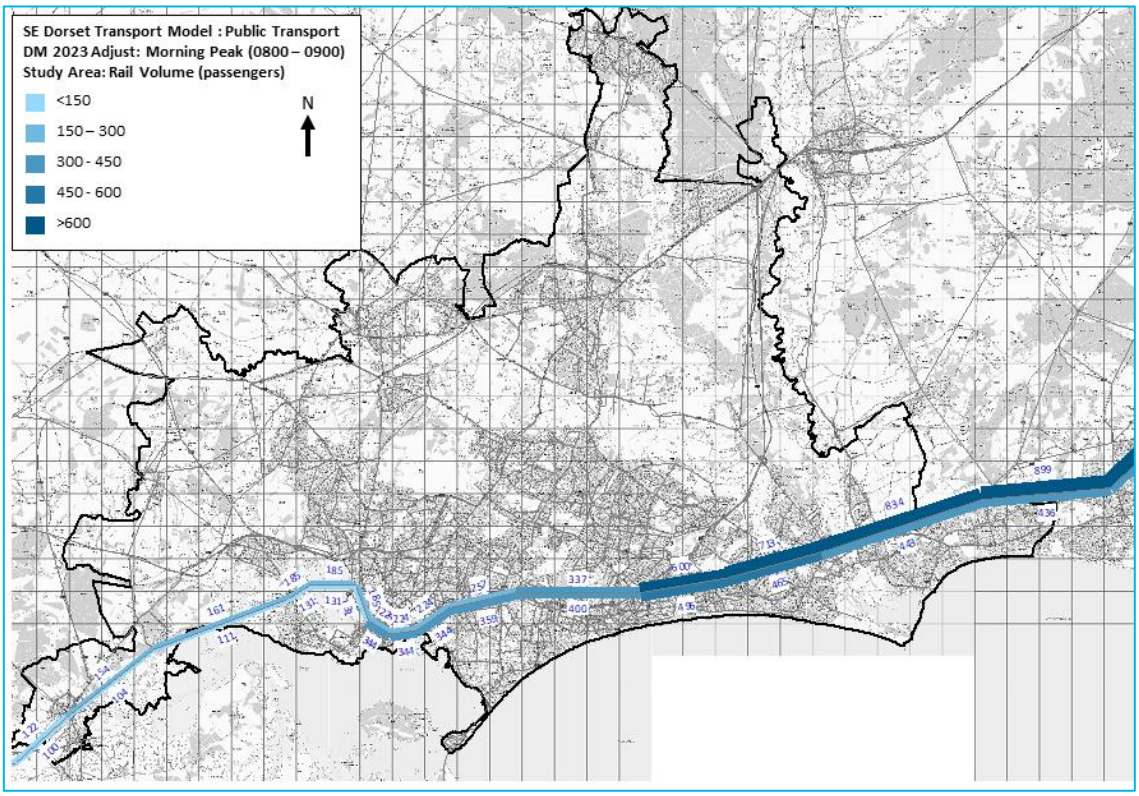


Figure 5.9: Rail Flows (passengers) - 2023 Do Minimum, Morning Peak

The predicted trip patterns generally reflect a continuation of what is currently experienced within the area, albeit with slightly greater road delays (due to the background growth that has been applied), which are spread across the network (Figures 5.10 and 5.11).

A number of locations across the area are predicted to experience relatively high levels of delay when using the road network, with the Creekmoor area and the A351/A350 junction near Sturminster Marshall experiencing delays of over two minutes. The increased delays relative to what is currently experienced are to be expected, due to the higher levels of demand for travel associated with the forecast population growth.

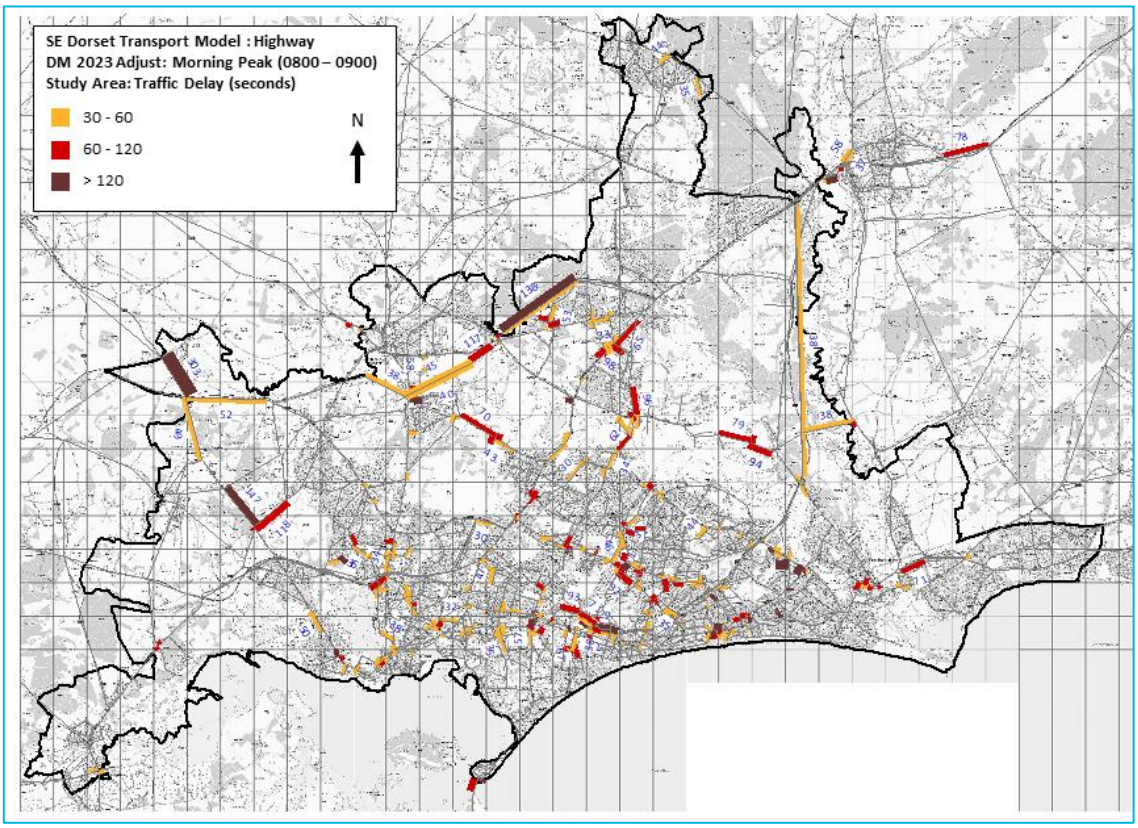


Figure 5.10: Link Delays (seconds) – 2023 Do Minimum, Morning Peak

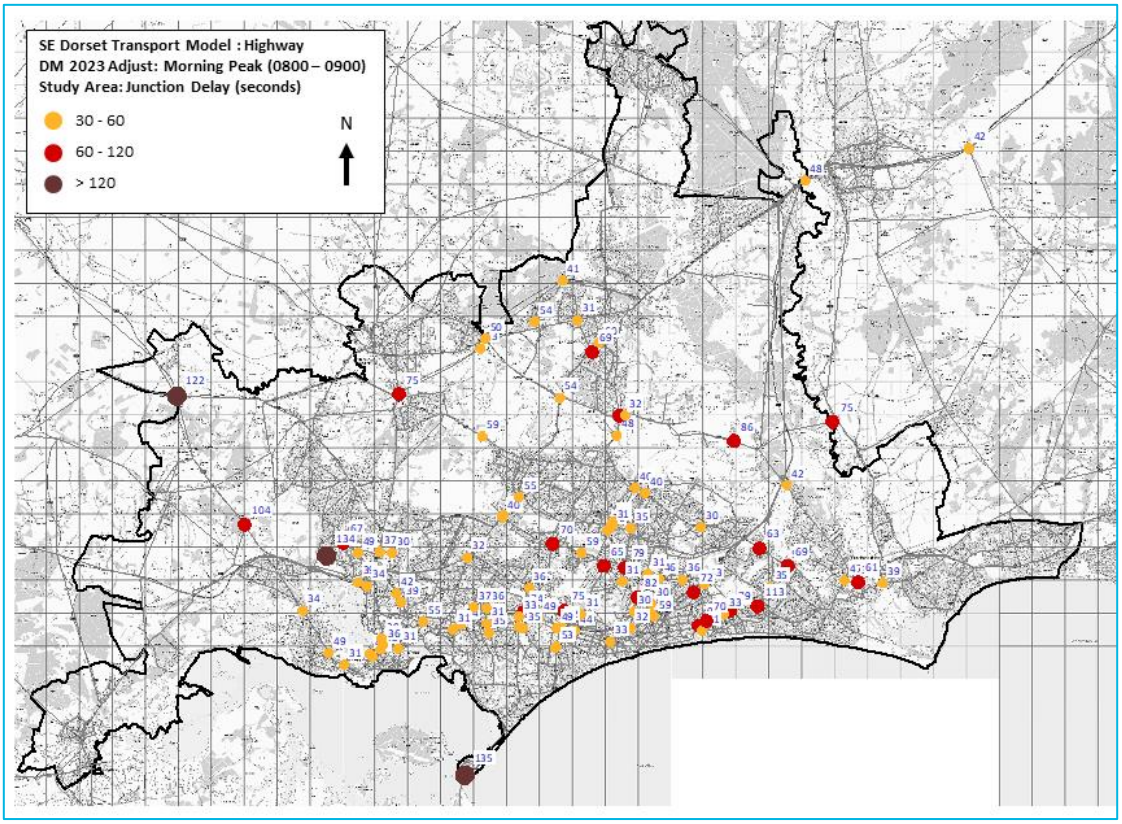


Figure 5.11: Junction Delay (seconds) – 2023 Do Minimum, Morning Peak

Do-Minimum Changes from 2023 to 2039

In the absence of any additional transport network improvements, the 2031 and 2039 morning peak period results generally present the same patterns as observed in 2023 in terms of people's travel and resulting impacts. However, it is important to note that the magnitude of the impacts (e.g. modelled delays) is predicted to increase across the area as a whole. Road delays are predicted to increase at nearly all the junctions, with a near 250% increase in the number of over-capacity queues across all junctions in the area by 2039. In addition, the junctions nearest to proposed development clusters in Poole and Bournemouth experience some of the greatest increases.

The model results suggest that, despite population growth, the number of passengers on key bus routes and total distance travelled by public transport during this period will reduce by a small amount by 2039. This could be due to bus services being disproportionately impacted by the increased number of vehicles on the road and associated congestion, with a small number of people subsequently returning to their cars in response.

In terms of journey times, all the 12 main highway routes are predicted to experience increases in travel time by 2039 (Table 5.1). The highest journey time increases can be observed along the A350 in the northbound direction, with journey times over 25% greater in 2039 than 2023. The A351 and A35 West routes to the north and west of Poole are forecast to experience the lowest increase in journey times, which could be attributed to a combination of spare operational capacity accommodating additional vehicles, availability of rail alternatives and also the relatively reduced model detail in the area.

Detailed analysis, including output plots and tables can be found in Section 2.1 of the full modelling report (Appendix D).

Table 5.1: Do Minimum Morning Peak Journey Time Comparisons, 2023 to 2039

Corridor	Direction	*Distance of route (km)	Journey Time Change (%) 2023 to 2031	Journey Time Change (%) 2023 to 2039
A3049 / A347	Eastbound	11.4	5.14%	8.53%
	Westbound	11.4	8.05%	14.65%
A31	Eastbound	28	10.91%	20.22%
	Westbound	27.9	7.75%	16.45%
A338	Northbound	17.5	7.51%	19.91%
	Southbound	17.4	5.32%	5.42%
A341 / A3060	Eastbound	13.7	6.52%	11.27%
	Westbound	13.7	6.88%	12.03%
A347	Northbound	7.5	8.82%	22.14%
	Southbound	8.2	9.31%	14.75%
A348 / A3049	Eastbound	13.8	9.28%	15.13%

	Westbound	13.9	9.01%	15.60%
A349	**Northbound**	5.6	3.22%	7.82%
	Southbound	5.5	11.78%	17.66%
A35 E	**Eastbound**	11.7	10.01%	24.97%
	Westbound	11.7	6.07%	10.93%
A35 W	**Eastbound**	17.8	3.46%	6.38%
	Westbound	18.5	3.65%	7.85%
A350	**Northbound**	13.9	18.42%	28.22%
	Southbound	13.9	6.07%	8.79%
A351	**Eastbound**	7.2	2.19%	3.70%
	Westbound	7.2	1.64%	3.60%
B3073	**Eastbound**	15.2	5.01%	8.67%
	Westbound	15.1	5.97%	11.04%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

Do-Minimum Model Analysis: Inter Peak Period

2023 Analysis

In the 2023 inter-peak period, based upon an average hour between 10 AM and 4 PM, there is again predicted to be a wide variety in where people travel to and from and how they travel (Figure 5.12 for cars, 5.13 for buses and 5.14 for rail). Overall, car and public transport demand is forecast to be significantly lower during this period than in the morning peak period, so there is subsequently less stress on the network.

The greatest magnitude of trips are still generally along the routes with the highest capacity, such as the A338 near Bournemouth, A350 near Poole and A35 Christchurch Bypass, or where several key external routes into the urban centres merge. Bus and rail modes are still forecast to be well utilised, albeit at significantly lower levels than cars (still about one-third of total trips, by distance). As with the morning peak, this relatively low public transport use is still most prevalent in, but not exclusive to, those areas not well served by bus or rail services.

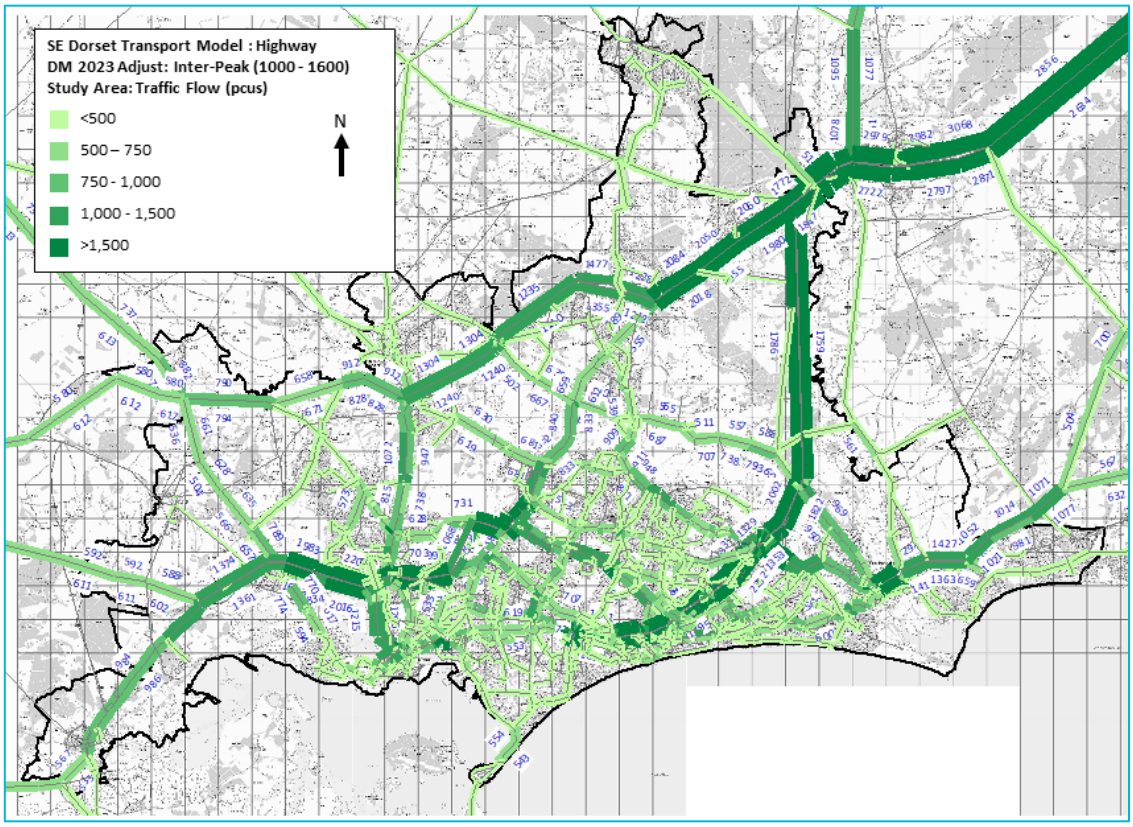


Figure 5.12: Highway Network Flows – 2023 Do Minimum, Inter-peak

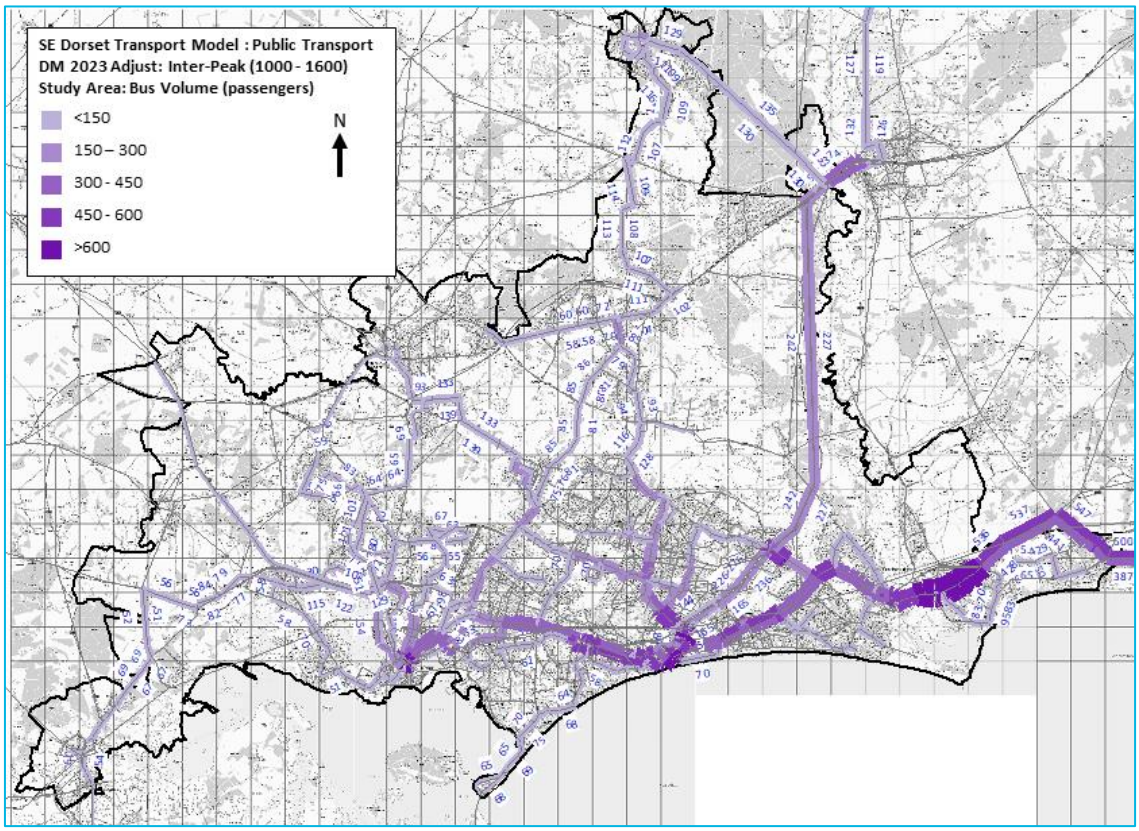


Figure 5.13: Bus Flows (passengers) - 2023 Do Minimum, Inter-peak

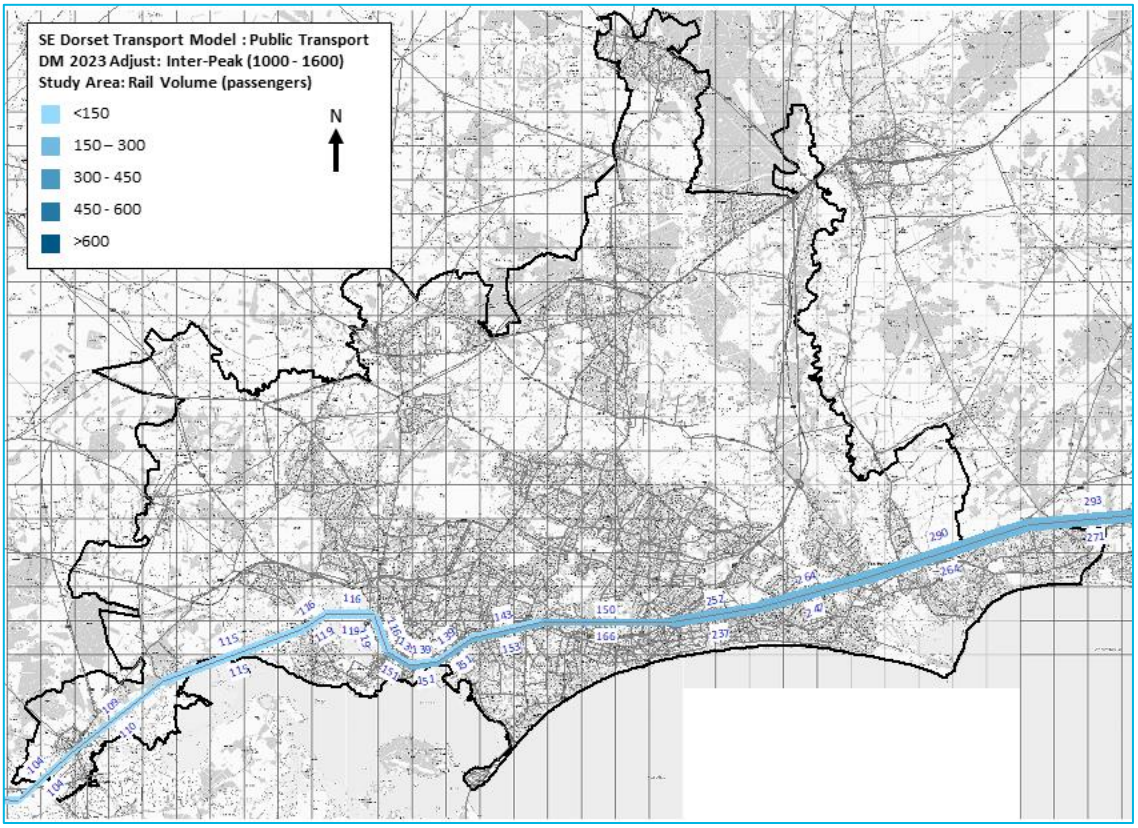


Figure 5.14: Rail Flows (passengers) - 2023 Do Minimum, Inter-peak

The predicted trip patterns generally reflect a continuation of what is currently experienced within the area, albeit with slightly greater road delays, which are spread across the network (Figures 5.15 and 5.16). A number of locations across the area are predicted to experience moderate levels of delay

when using the road network, with the B3073/Bournemouth Airport junction and the A347/B3063 junction (Lansdowne Road/Charminster Road) the only areas experiencing delays of over a minute. The increased delays relative to what is currently experienced are to be expected, due to the higher levels of demand for travel associated with the forecast population growth.

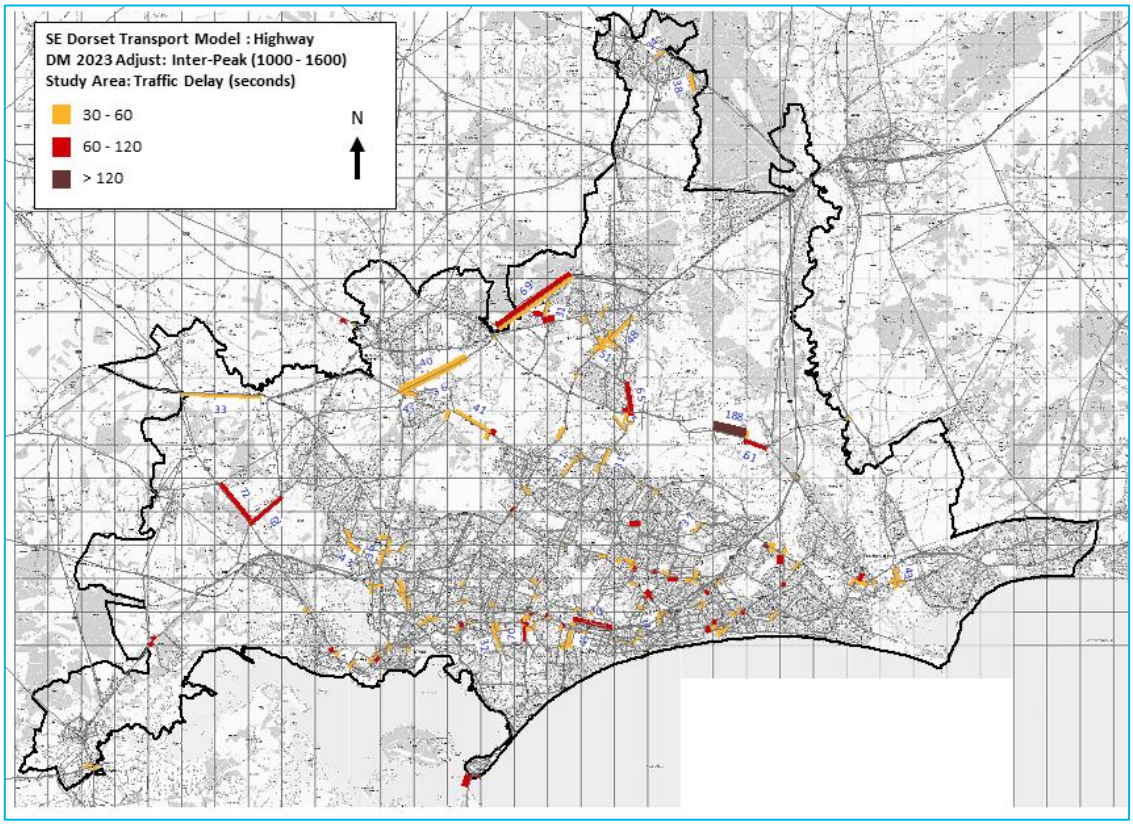


Figure 5.15: Link Delays (seconds) – 2023 Do Minimum, Inter-peak

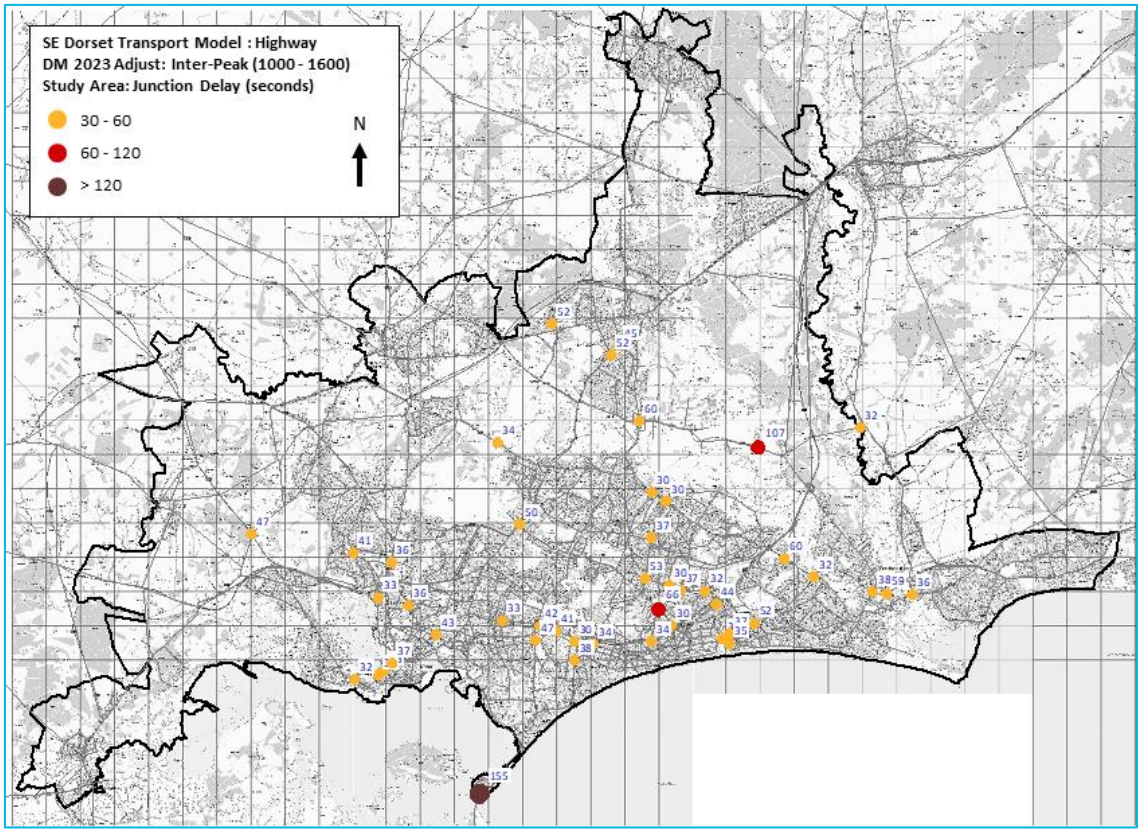


Figure 5.16: Node Delay (seconds) – 2023 Do Minimum, Inter-peak

Changes Over Time, from 2023 to 2039

In the absence of any additional transport network improvements, the 2031 and 2039 inter-peak period results generally present the same patterns as observed in 2023 in terms of people's travel and resulting impacts. However, it is important to note that the magnitude of the impacts is predicted to increase across the area as a whole. Road delays are predicted to increase a relatively small amount across approximately 50 additional junctions, representing a near 450% increase in the number of over-capacity queues across all junctions in the area by 2039.

The model results suggest that, despite population growth, the number of passengers on key bus routes and total distance travelled by public transport during this period will remain at a similar level by 2039. This could be due to the relative lack of traffic congestion and bus services during this time period bus services means that the use of car would still be relatively more attractive for the additional population.

In terms of journey times, all of the 12 main highway routes are predicted to experience increases in travel time (Table 5.2). However, when compared to the morning peak period, the magnitude of journey time increases is relatively low, most likely due to the inherent lower levels of demand during this period. The highest journey time increase can be observed along the A31 in both directions, with a predicted increase by 2039 of around 11% relative to 2023. The A347, A341/A3060, A349, A35 W, A350 and A351 routes are all predicted to experience inter peak journey time increases of generally less than 5%. Given the relatively low change in public transport patronage, these lower increases are therefore likely to be attributed to relatively high levels of spare operational capacity during the inter-peak period.

Detailed analysis, including output plots and tables can be found in Section 2.1 of the full modelling report (Appendix D).

Table 5.2: Do Minimum Inter-peak Journey Time Comparisons, 2023 to 2039

Corridor	Direction	*Distance of route (km)	Journey Time Change (%) 2023 to 2031	Journey Time Change (%) 2023 to 2039
A3049 / A347	Eastbound	11.4	5.06%	8.99%
	Westbound	11.4	4.72%	9.85%
A31	Eastbound	28	5.91%	11.75%
	Westbound	27.9	4.25%	10.22%
A338	Northbound	17.5	5.11%	9.06%
	Southbound	17.4	4.92%	7.78%
A341 / A3060	Eastbound	13.7	2.34%	4.20%
	Westbound	13.7	3.04%	5.87%
A347	Northbound	7.5	3.03%	5.76%
	Southbound	8.2	2.22%	3.89%
A348 / A3049	Eastbound	13.8	5.64%	10.27%

Corridor	Direction	*Distance of route (km)	Journey Time Change (%) 2023 to 2031	Journey Time Change (%) 2023 to 2039
	Westbound	13.9	4.40%	8.81%
A349	**Northbound**	5.6	2.32%	4.21%
	Southbound	5.5	2.00%	4.00%
A35 E	**Eastbound**	11.7	2.72%	5.44%
	Westbound	11.7	3.97%	7.63%
A35 W	**Eastbound**	17.8	2.33%	4.01%
	Westbound	18.5	1.98%	3.68%
A350	**Northbound**	13.9	2.10%	4.20%
	Southbound	13.9	3.10%	4.50%
A351	**Eastbound**	7.2	0.71%	1.65%
	Westbound	7.2	0.79%	1.59%
B3073	**Eastbound**	15.2	2.85%	4.80%
	Westbound	15.1	3.75%	7.68%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

Do-Minimum Model Analysis: Afternoon Peak Period

2023 Analysis

In the 2023 afternoon peak period, there is predicted to be a wide variety in where people travel to and from and how they travel (Figure 5.17, 5.18 and 5.19). The greatest magnitude of trips are generally along the routes with the highest capacity, such as the A338 near Bournemouth and A350 out of Poole, or where several key external routes into the urban centres merge. Bus and rail modes are still forecast to be well utilised, albeit at significantly lower levels than cars (under one-third of total trips, by distance). This relatively low public transport use in most prevalent in, but not exclusive to, those areas not well served by bus or rail services.

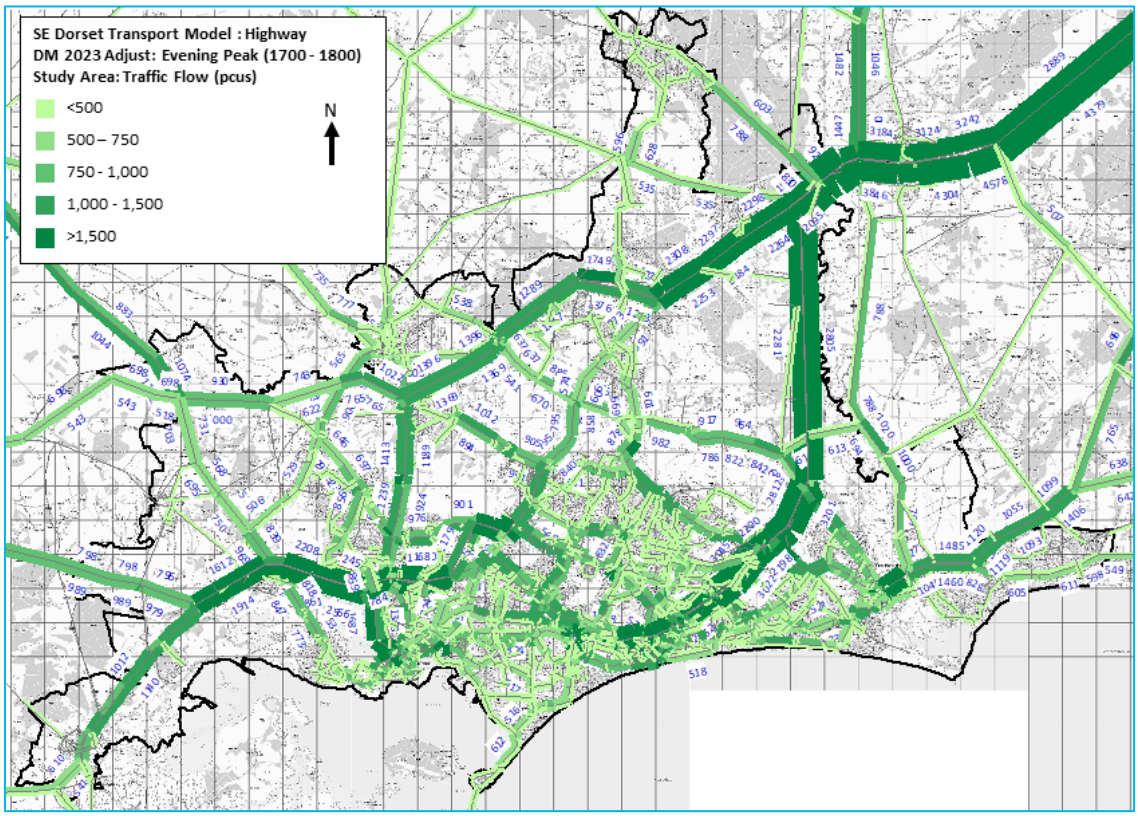


Figure 5.17: Highway Flows (actual) – 2023 Do Minimum, Afternoon Peak

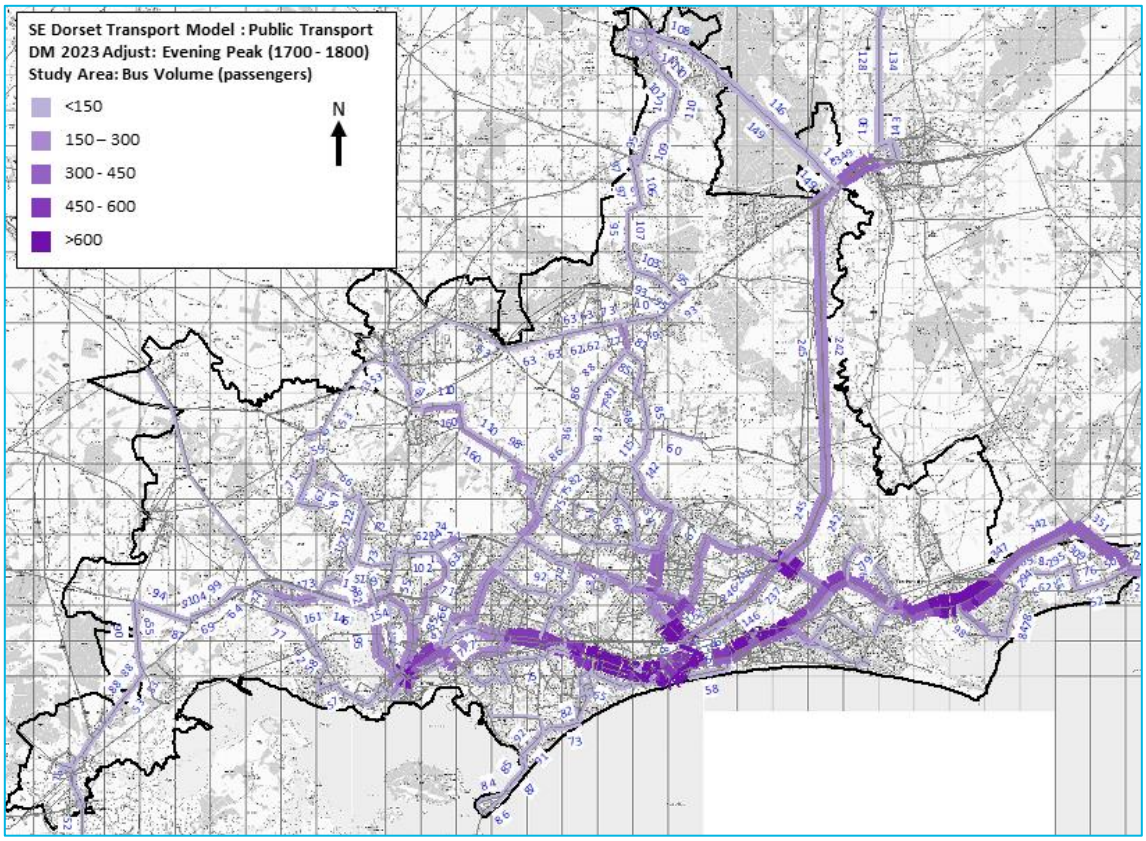


Figure 5.18: Bus Flows (passengers) - 2023 Do Minimum, Afternoon Peak

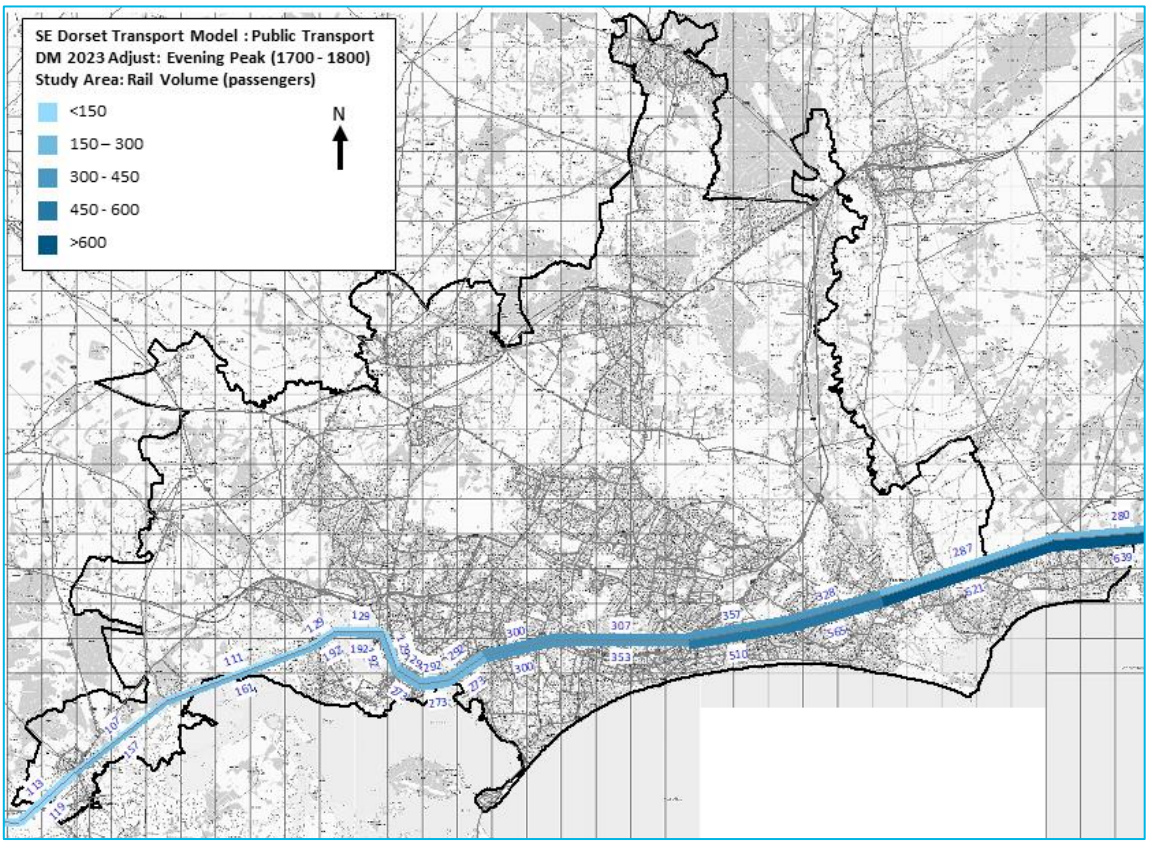


Figure 5.19: Rail Flows (passengers) - 2023 Do Minimum, Afternoon Peak

The predicted trip patterns generally reflect a continuation of what is currently experienced within the area, albeit with slightly greater road delays, which are spread across the network (Figures 5.20 and 5.21). A number of locations across the area are predicted to experience relatively high levels of delay when using the road network. The junctions within the vicinity of Bournemouth are generally predicted to experience delays of between one and two minutes, with the A351/A350 junction near Sturminster Marshall also experiencing delays of over two minutes. The increased delays relative to what is currently experienced are to be expected, due to the higher levels of demand for travel associated with the forecast population growth.

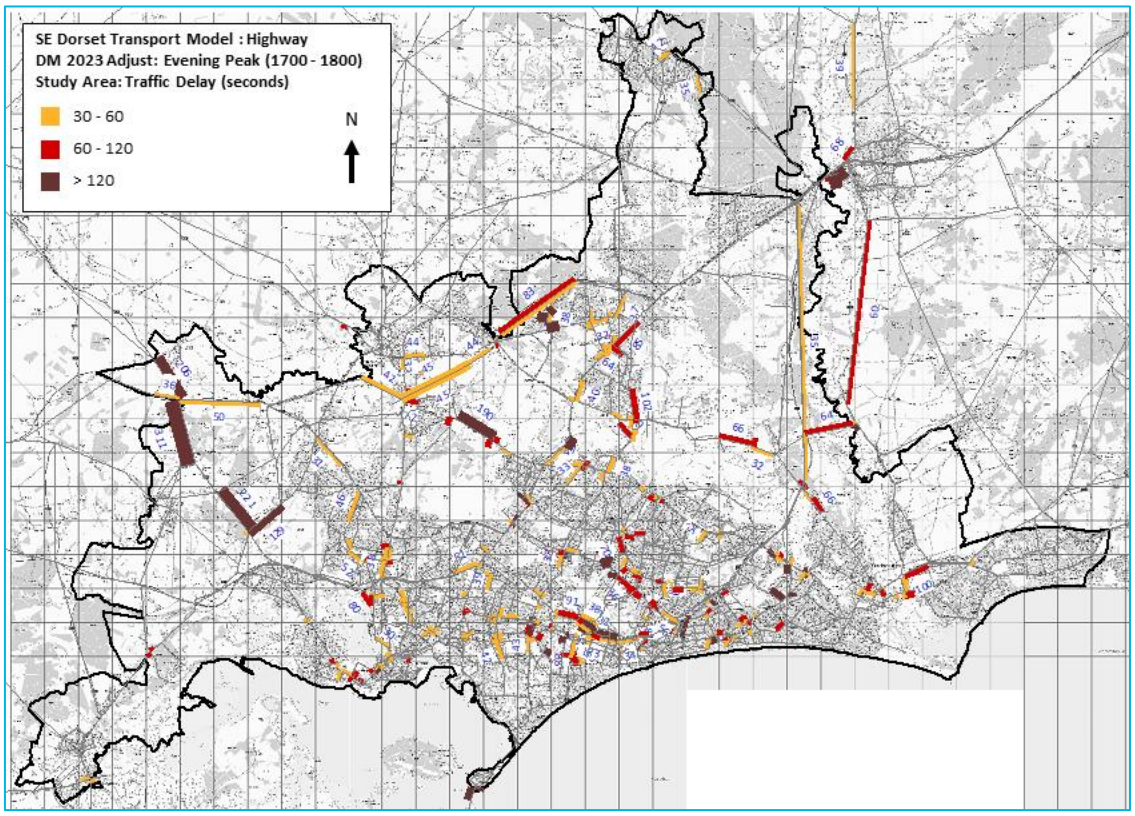


Figure 5.20: Link Delays (seconds) – 2023 Do Minimum, Afternoon Peak

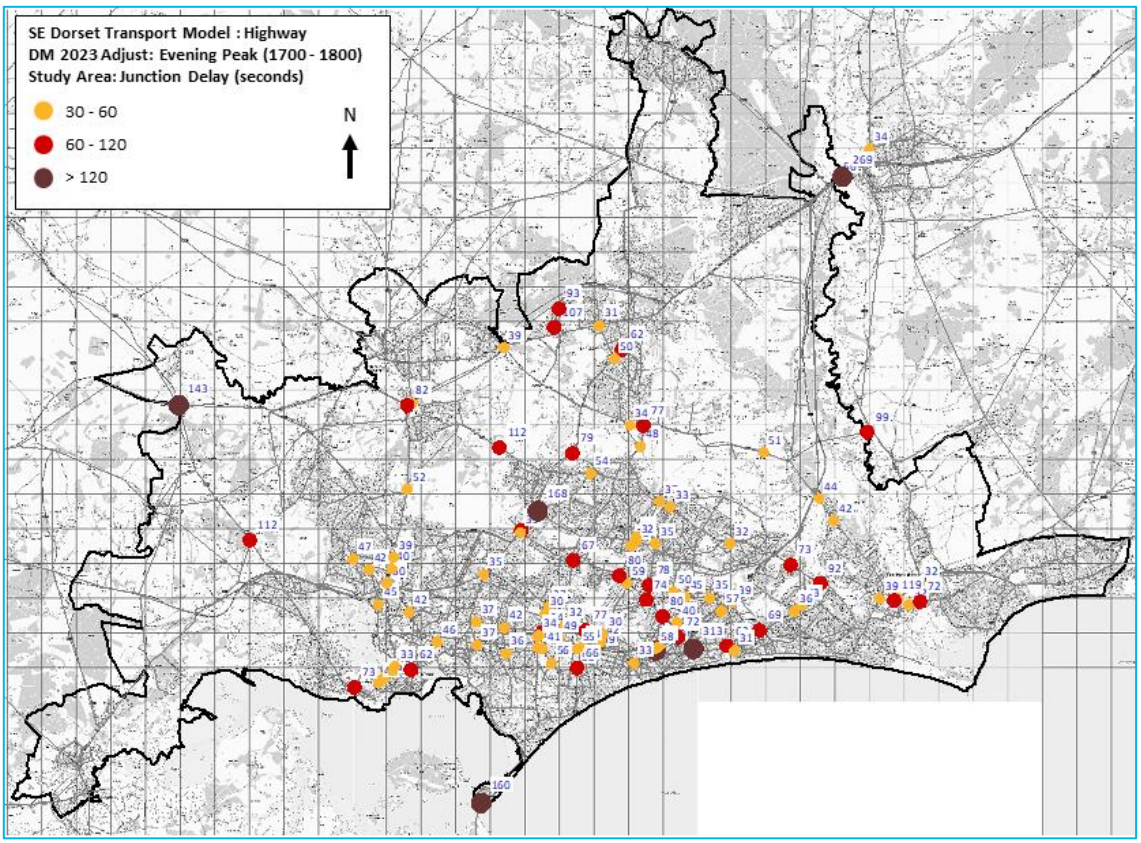


Figure 5.21: Node Delay (seconds) – 2023 Do Minimum, Afternoon Peak

Changes Over Time, from 2023 to 2039

In the absence of any additional transport network improvements, the 2031 and 2039 afternoon peak period results generally present the same patterns as observed in 2023 in terms of people's travel and resulting impacts. However, it is important to note that the magnitude of the impacts is predicted to increase across the area as a whole. Road delays are predicted to increase at nearly all of the junctions, with a near 200% increase in the number of over-capacity queues across all junctions in the area by 2039. In addition, the junctions nearest to proposed development clusters in Poole and Bournemouth experience some of the greatest increases.

The model results suggest that, despite population growth, the number of passengers on key bus routes and total distance travelled by public transport during this period will reduce by a small amount by 2039. As with the similarly busy morning peak, this reduction could be due to bus services being disproportionately impacted by the increased number of vehicles on the road and associated congestion, with a small number of people subsequently returning to their cars in response.

In terms of journey times, all the 12 main highway routes are predicted to experience increases in travel time (Table 5.3). The highest journey time increases can be observed along the A338 (both directions), A31 (eastbound) A3049/A347 (eastbound), A347 (eastbound) and A35 E (westbound). All of these routes are forecast to experience a journey time increase of over 20% by 2039, relative to 2023.

As also observed with the morning peak, The A351 and A35 West routes to the north and west of Poole are forecast to experience the lowest increase in journey times, which could be attributed to a combination of spare operational capacity accommodating additional vehicles, availability of rail alternatives and also the relatively reduced model detail in the area.

Detailed analysis, including output plots and tables can be found in Section 2.1 of the full modelling report (Appendix D).

Table 5.3: Do Minimum Afternoon Peak Journey Time Comparisons, 2023 to 2039

Corridor	Direction	*Distance of route (km)	Journey Time Change (%) 2023 to 2031	Journey Time Change (%) 2023 to 2039
A3049 / A347	Eastbound	11.4	11.37%	21.45%
	Westbound	11.4	6.11%	10.06%
A31	Eastbound	28	7.15%	15.54%
	Westbound	27.9	12.30%	22.22%
A338	Northbound	17.5	12.51%	19.30%
	Southbound	17.4	10.30%	22.84%
A341 / A3060	Eastbound	13.7	6.44%	12.45%
	Westbound	13.7	3.52%	5.68%
A347	Northbound	7.5	1.78%	3.81%
	Southbound	8.2	13.06%	28.24%

Corridor	Direction	*Distance of route (km)	Journey Time Change (%) 2023 to 2031	Journey Time Change (%) 2023 to 2039
A348 / A3049	**Eastbound**	13.8	9.17%	16.94%
	Westbound	13.9	6.87%	12.48%
A349	**Northbound**	5.6	10.03%	16.26%
	Southbound	5.5	6.36%	9.81%
A35 E	**Eastbound**	11.7	7.32%	11.33%
	Westbound	11.7	6.43%	20.17%
A35 W	**Eastbound**	17.8	2.78%	7.12%
	Westbound	18.5	2.61%	5.96%
A350	**Northbound**	13.9	2.85%	5.40%
	Southbound	13.9	7.34%	10.24%
A351	**Eastbound**	7.2	1.51%	3.68%
	Westbound	7.2	0.79%	1.38%
B3073	**Eastbound**	15.2	8.97%	13.19%
	Westbound	15.1	4.08%	6.09%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

5.3 Do-Something: With Strategy Analysis

Introduction

The 'Do Something' scenarios present a prediction of how the transport network may function. However, as outlined in Section 4.6, a number of assumptions had to be made to represent the proposed interventions within the model's limitations. Before undertaking the Do-Something scenario tests, the list of interventions presented in Appendix C were therefore analysed and categorised for use in the model. The list of interventions is outlined in Annex D of the full modelling report (Appendix D) and were initially categorised based on three steps;

1. Whether the interventions can be modelled explicitly; those that cannot be modelled have been removed from the modelling process.
2. Whether there is enough information to model the intervention; where there was not were also removed from the process
3. Each process was allocated a colour based on information available for modelling the interventions; as shown in Annex D of the full modelling report (Appendix D)
    - **Grey** – interventions that cannot be modelled – reasons why are explained in the appendix.
    - **Red** – interventions where there was not enough information to explicitly model therefore have not been modelled (N.B. there are no red interventions
    - **Amber/Green** – interventions where some information was available but allocated amber where some professional judgement/assumptions were used

For the amber and green interventions left, a grouping exercise was undertaken. This is where similar interventions would have a cumulative impact on the model e.g. those based around school travel planning or workplace travel planning.

In addition, and where it was applicable, the impact of the interventions have been allocated an estimated mode demand shift. Following the relevant guidance in TAG (Unit M5.2 – Modelling Smarter Choices), this shift has been calculated using evidence where available. This evidence has been gathered from across the UK and Europe with professional judgement used to apply the evidence to the study area. It should be noted that these shifts are intended to be challenging as we are trying to show what can be achieved rather than using a 'business as usual' approach. This approach has been outlined in the objectives defined at the start of the project.

Annex D of the full modelling report (Appendix D) outlines the full list of interventions and the results of the first analysis for their inclusion of the modelling scenarios, including a description why some have been omitted from the process and information on the group which they are allocated to.

From this reduced list, further research was undertaken to detail the specific modelling for each intervention. These have then been modelled and packaged together into the three Do-Something scenarios (2023, 2031 and 2039).

As the modelled forecast years do not match up neatly with the intervention years, Table 5.4 shows how the interventions have been packaged into the modelled forecast years.

Table 5.4: Intervention Packages allocated to SEDUMS Forecast Years

Intervention Years from 2020	5 years (2025)	10 years (2030)	15 years (2035)	20 years (2040)
Allocated SEDUMS Model years	2023	2031	2039	2039

Do Something Time Period One: 2023

Table 5.5 outlines the grouped interventions and further details on how they have been modelled. All of these have been included within the 2023 Do-Something scenario. All interventions outlined for the 5-year period have been included.

Table 5.5: 2023 Interventions

Group	Details on Modelling
5 years - 20mph limits	A number of locations have been outlined as potential 20mph zones in Poole which have been modelled by reducing speed limits in these areas. A map of these are detailed in Annex D of the full modelling report (Appendix D)
5 years - School Travel Planning	2.25% decrease in trips across the model for car other trips - assuming a switch to walking and cycling
5 years - Cycling Infrastructure Improvements	3% decrease in trips across the model for private car trips - assuming a switch to cycling
5 years - Modal Filters on Side Roads	BCP Council supplied a list of proposed junction changes across the area. These are detailed in Annex D of the full modelling report (Appendix D)
5 years - Workplace Travel Planning	2% decrease in trips across the model for car commuting trips - assuming a switch to walking/cycling
5 years - Bournemouth Airport and Aviation Travel Plan	
5 years - Ferndown Industrial Estate Travel Plan	
5 years - Cycling Corridors	2% decrease in trips across the model for private car trips - assuming a switch to cycling
5 years - Reduction in LGVs	2% decrease of all LGV trips in central areas (Poole Peninsula, Bournemouth Central, Christchurch Central)
5 years - Lansdowne Roundabout	Highway network changes as agreed with BCP Council - A bus gate on Holdenhurst Road (closure to non-bus vehicles in both directions) and Meyrick Road closed at the roundabout to all vehicles
5 years - Improvements to Key Junctions	General signal optimisation across junctions with a Volume Capacity Ratio of more than 90%
5 years - Tourist Travel Planning	2.25% decrease in trips across the model for car other trips and shift to bus
5 years - Private Car Ban on The Quay	Cars are banned on the Quay during the interpeak only
5 years - Road Closures	BCP Council outlined a number of road closures which have been put into the model. These are detailed in Annex D of the full modelling report (Appendix D)
5 years - Holes Bay Walkway	Pedestrian crossing has been added to the network to the south of the A350 Holes Bay Roundabout

Do Something Time Period Two: 2031

Table 5.6 below outlines the grouped interventions and further details on how they have been modelled. All of these have been included within the 2031 Do-Something scenario, in addition to the 2023 interventions. All interventions outlined for the 10-year period have been included.

Table 5.6: 2031 Interventions

Group	Details on Modelling
10 years - Bus Improvements	2% decrease in trips across the model for private car trips - assuming a switch to bus. 10-minute frequency bus service on the main artery routes across the study area (X1, X2 ,X3, X6, X8)
10 years - Parking Strategy	2% decrease in trips across the model for private car trips - assuming a switch to bus
10 years - Creekmoor to Upton Park Bridge	2% decrease in trips across the model for private car trips - assuming a switch to cycling/walking
10 years - Ferndown to West Moors Trailway	2% decrease in trips across the model for private car trips - assuming a switch to cycling/walking
10 years - Sustainable Transport Corridors	2% decrease in trips across the model for private car trips - assuming a switch to bus. Bus services added along transport corridors.
10 years - Bus Services Outside BCP Council area	2% decrease in trips across the model for private car trips - assuming a switch to bus. Express bus services added (every 30 minutes) added between Poole to Shaftesbury, Poole to Bere Regis, Milborne St Andrew and Puddletown
10 years - Express Bus Services within BCP Council area	2% decrease in trips across the model for private car trips - assuming a switch to bus. Express bus services added (every 30 minutes) added from centre of Bournemouth to Verwood via Airport, Ferndown and West Moors. Additional service added from centre of Poole to Verwood via Airport, Ferndown and West Moors.
10 years – New Park and Rides	Six park and rides have been modelled: Creekmoor, Mannings Heath and Wimborne (for Poole) and Blackwater, Northbourne Roundabout and Bournemouth Airport (for Bournemouth). Modelling assumptions are detailed below. Only the Car Other and Car Commuting user classes have been affected. 15-minute frequency bus services added between P&R sites and centre of town.
10 years - Park and Ride Creekmoor	
10 years -Public Transport improvement between port/airport	Existing X3 and X6 rerouted to travel via airport.
10 years - Freight Hubs	2% decrease of freight trips (UC4, UC5) from Poole Port only
10 years - Bath Road Car Park Closure	Bath Road Car Park has been closed within the model with 80% of trips shifted to an adjacent car park zone (z182) and 20% shifted to bus
10 years - Lansdowne Travel Interchange	Additional bus stops have been added to existing services through the area

For the Park and Ride sites, a Select Link Analysis along each park and ride route to ascertain which vehicles may use the proposed site. For each site, trips between the centre of Poole or Bournemouth (dependant on the site) and zones in which vehicles may realistically pass and switch to the Park and Ride. Of these vehicles, it has been assumed that 30% will switch to the Park and Ride. This has been done for all peaks and forecast years separately to account for changes to the matrices due to other interventions. In the AM Peak, changes have been made to trips travelling into the centre, in the PM Peak, the shift affects trips leaving the centre. In the Interpeak the shift has been applied in both directions.

Due to the limitations of the model, the model is only focused on the highway changes rather than the public transport change with the addition of the sites. However, the variable demand model does include services between the park and ride sites and the centre of Poole/Bournemouth.

Do Something Time Period: 2039

Table 5.7 below outlines the grouped interventions and further details on how they have been modelled. All of these have been included within the 2039 Do-Something scenario, in addition to the 2023 and 2031 interventions. All interventions outlined for the 15- and 20-year period have been included in this forecast year.

Table 5.7: 2039 Interventions

Group	Details on Modelling
15 years - Rail improvements - Reduced journey time to circa 1 hour 45 mins from Poole / 1 hour 30 from Bournemouth	Added once every 30-minute service from Poole - Southampton (also calling at Bournemouth and Christchurch)
15 years - More frequent rail service between Poole and Bournemouth	Headway of trains changed from an hour to 30 minutes.
15 years - Rail improvements - Reduce journey times on services between Weymouth and London	Journey times have been reduced on rail services between Weymouth and London. Bournemouth to London in 90 minutes
20 years - Rail improvements - New journey opportunities from south Dorset to major destinations	Addition of a Bournemouth to Bristol service, calling at Weymouth, Exeter and Plymouth. Once every 60 minutes.
20 years - Rail improvements - Dorset Metro	Start and end of services moved from Poole to Holton Heath
20 years - Rail improvements - New/ improved journey opportunities in areas not served by rail (north Bournemouth/ north Poole/ Ferndown/ Bournemouth Airport/ Verwood/ Wimborne	Added new stations at Bournemouth Airport and Ringwood. Added once every 30-minute service from Bournemouth to Ringwood calling at Pokesdown, Christchurch and Bournemouth Airport
20 years – Rail/Bus improvements - Dorset Area Rapid Transit System (DARTS)	Added once every 15-minute service from New Milton to Wareham. Route and details have been taken of the scheme is in line with info from the Atkins 2012 model
20 years - Rail improvements - New Railway Station at Talbot Heath	Added a new station here and added a 10-min frequency service through area stopping at this station

Comparison of Do-Minimum and Do-Something Scenarios

As with the Do Minimum analysis, this section provides a summary of the modelling results. Full result outputs and analysis can be found in Section 2 of the full modelling report (Appendix D). A further layer of model output detail can also be found within the full modelling report in the following locations:

- More detailed area maps Annex A
- Highway model statistics Annex B
- Journey time comparisons Annex C

2023 Comparison: Morning Peak

In the 2023 morning peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 will collectively result in a reasonable magnitude of change to the area's transport networks.

The outputs show some significant redistribution of traffic across the network but especially within the centre of Bournemouth (Figure 5.22). This can be attributed to the proposed road closures and 20 mph zones across the area. Key changes in traffic include reductions in traffic of over 500 vehicles along West Cliff Road, Glenferness Avenue and Wallisdown Road. There will be some minor increases in vehicles using some roads, such as the A350 near Poole, as a result of these measures.

The smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially

when considered alongside the travel plan measures (Figure 5.23 and Figure 5.24). Overall, there is predicted to be an increase in public transport use of approximately 17% across the whole area, which may be supported by a reasonable number of people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the measures.

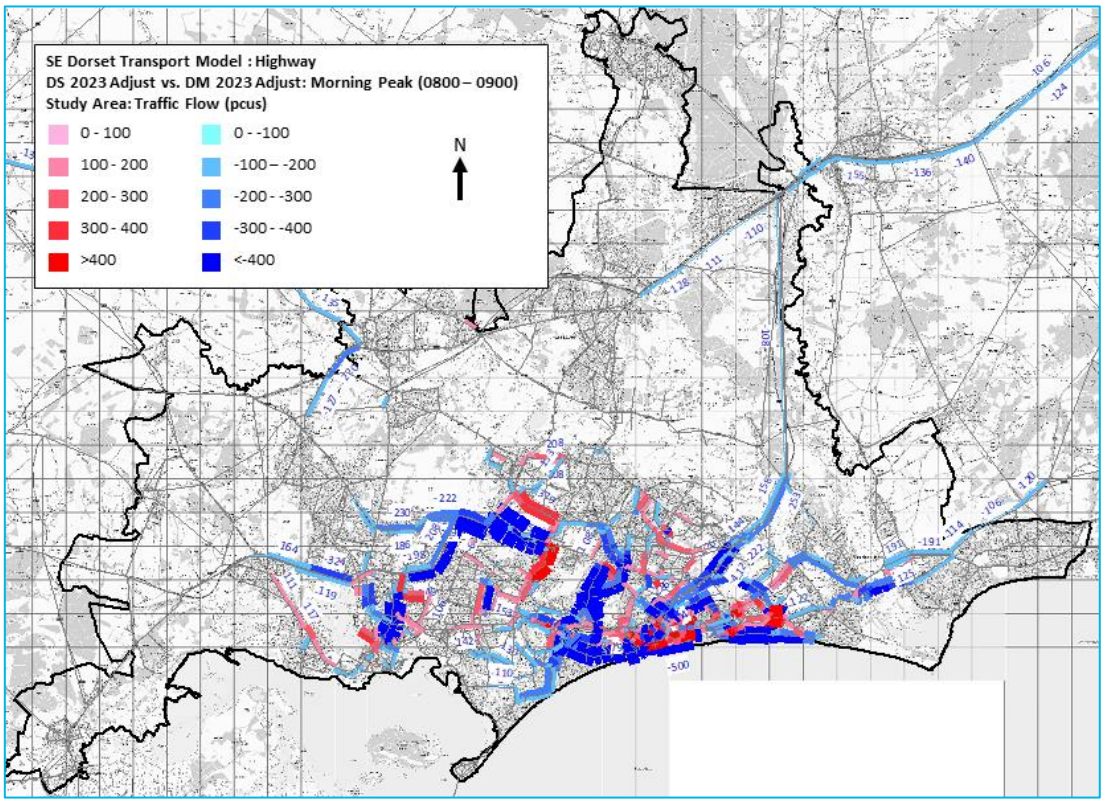


Figure 5.22: Highway Flows (actual) – 2023 Do-S vs Do-M, Morning Peak

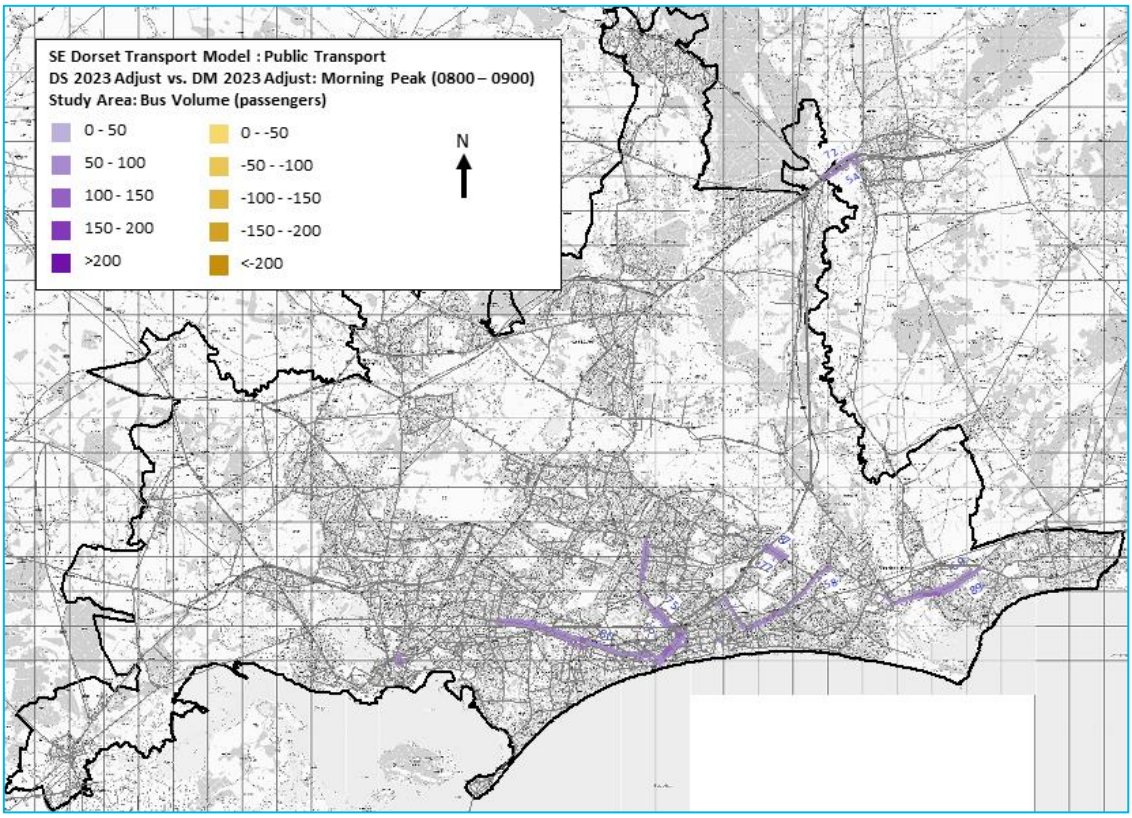


Figure 5.23: Bus Flows (passengers) - 2023 Do-S vs Do-M, Morning Peak

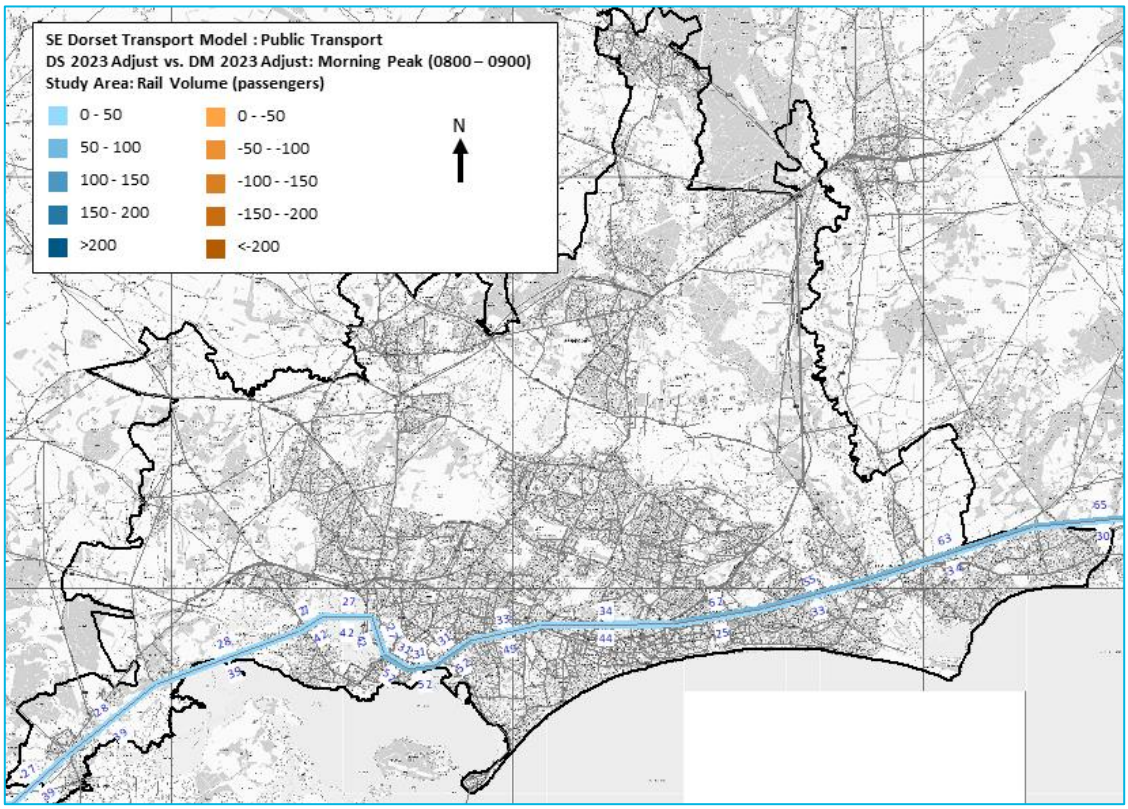


Figure 5.24: Rail Flows (passengers) - 2023 Do-S vs Do-M, Morning Peak

In terms of delays for those using the highway network, the 2023 model outputs suggest that there is a redistribution of delays across the area. However, the changes in delay are generally relatively minor (between 30 to 60 seconds) and split in quantity between reductions and increases in delay. There are some notable individual road and junction changes, including the Bournemouth West junction on the A339 eastbound (approximately 100 second increase) and the A3049 approach to Holes Bay North (approximately 60 second decrease).

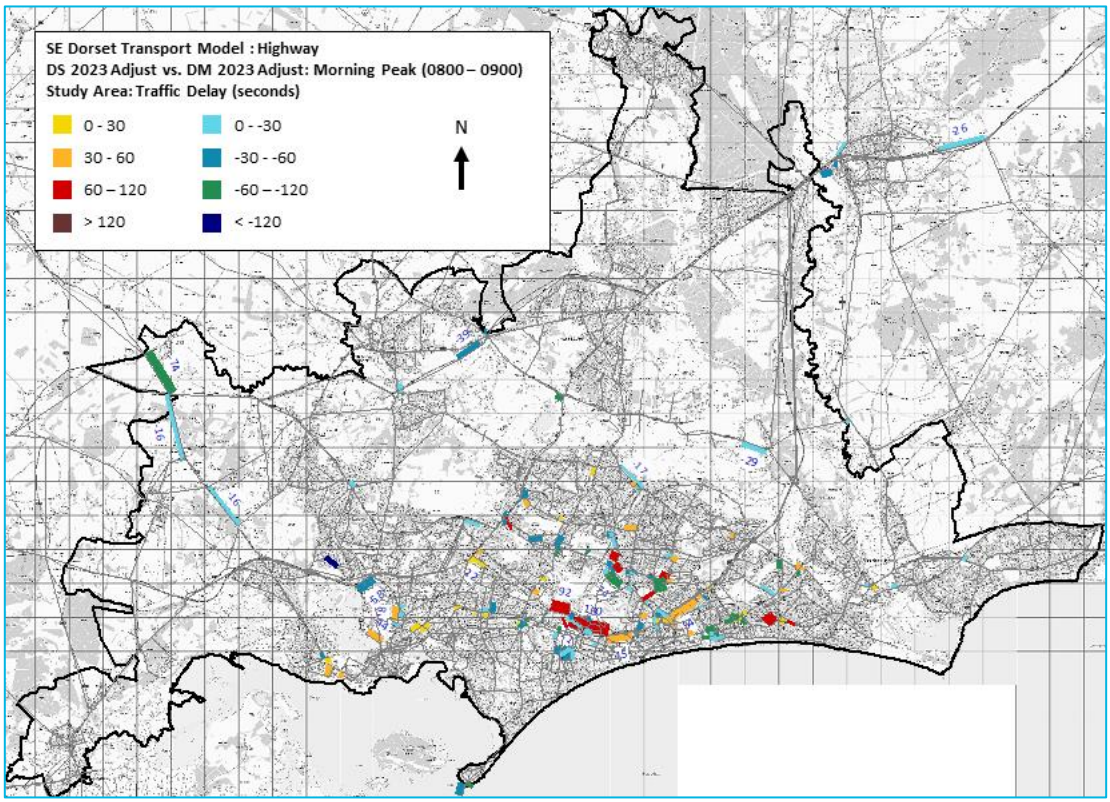


Figure 5.25: Link Delays (seconds) – 2023 Do-S vs Do-M, Morning Peak

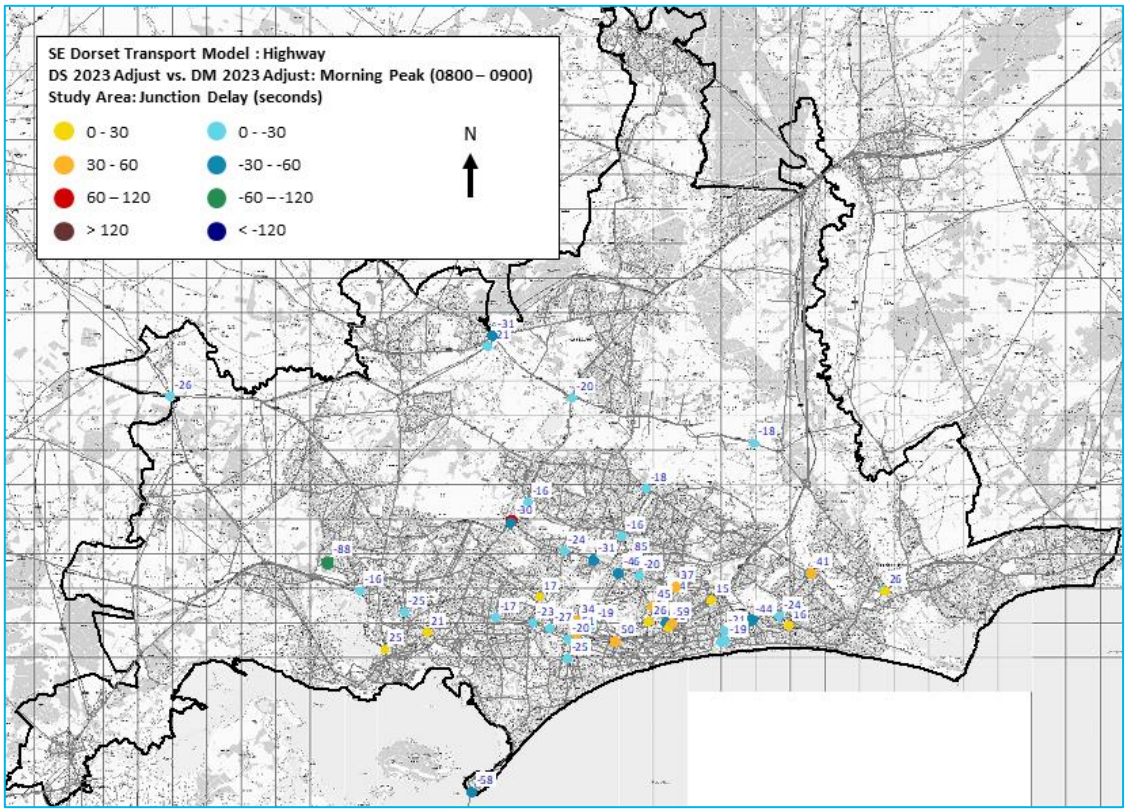


Figure 5.26: Node Delay (seconds) – 2023 Do-S vs Do-M, Morning Peak

When translated into journey times changes along the 12 key routes, most routes are predicted to experience a reduction in journey times. These reductions are generally small, in the region of less than 5% (Table 5.8). The A338 has a noticeable increase in journey time with the interventions in place, between approximately 10% and 30%, which is due to the closure of parallel routes to private

cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338. There is a minor decrease on the A345 W Eastbound as there are several interventions on this route which close some movements at junctions.

Table 5.8: Journey Time Changes - 2023 Do-Minimum vs 2023 Do-Something: AM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	Eastbound	11.4	00:21:11	00:21:26	1.2%
	Westbound	11.4	00:20:37	00:15:35	-24.4%
A31	Eastbound	28	00:28:41	00:27:23	-4.5%
	Westbound	27.9	00:23:52	00:23:13	-2.7%
A338	Northbound	17.5	00:11:46	00:15:21	30.5%
	Southbound	17.4	00:16:17	00:18:08	11.3%
A341 / A3060	Eastbound	13.7	00:27:12	00:26:01	-4.4%
	Westbound	13.7	00:27:58	00:26:35	-5.0%
A347	Northbound	7.5	00:12:19	00:11:42	-5.1%
	Southbound	8.2	00:13:40	00:12:54	-5.6%
A348 / A3049	Eastbound	13.8	00:20:54	00:20:07	-3.7%
	Westbound	13.9	00:20:28	00:20:54	2.1%
A349	Northbound	5.6	00:08:13	00:08:01	-2.5%
	Southbound	5.5	00:08:58	00:08:23	-6.6%
A35 E	Eastbound	11.7	00:21:34	00:20:57	-2.9%
	Westbound	11.7	00:26:21	00:25:57	-1.6%
A35 W	Eastbound	17.8	00:27:41	00:25:56	-6.3%
	Westbound	18.5	00:27:20	00:26:35	-2.7%
A350	Northbound	13.9	00:15:09	00:14:47	-2.4%
	Southbound	13.9	00:23:26	00:22:50	-2.6%
A351	Eastbound	7.2	00:07:10	00:07:08	-0.4%
	Westbound	7.2	00:06:23	00:06:21	-0.5%
B3073	Eastbound	15.2	00:21:31	00:21:22	-0.7%
	Westbound	15.1	00:21:50	00:20:59	-3.9%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

2023 Do Minimum vs Do Something: Inter-peak

In the 2023 inter-peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 will collectively result in a reasonable magnitude of change to the area's transport networks.

The outputs show some significant redistribution of traffic across the network but especially within the north and centre of Bournemouth (Figure 5.27). This can be attributed to the proposed road closures and 20 mph zones across the area. Key changes in traffic include reductions in traffic of over 300

vehicles along West Cliff Road, Glenferness Avenue and Wallisdown Road. There will be minor increases in vehicles using some roads, such as the A350 near Poole, as a result of these measures.

The smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially when considered alongside the travel plan measures (Figure 5.28 and Figure 5.29). Overall, there is predicted to be an increase in public transport use of approximately 25% across the whole area, which may be supported by a reasonable number of people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the measures.

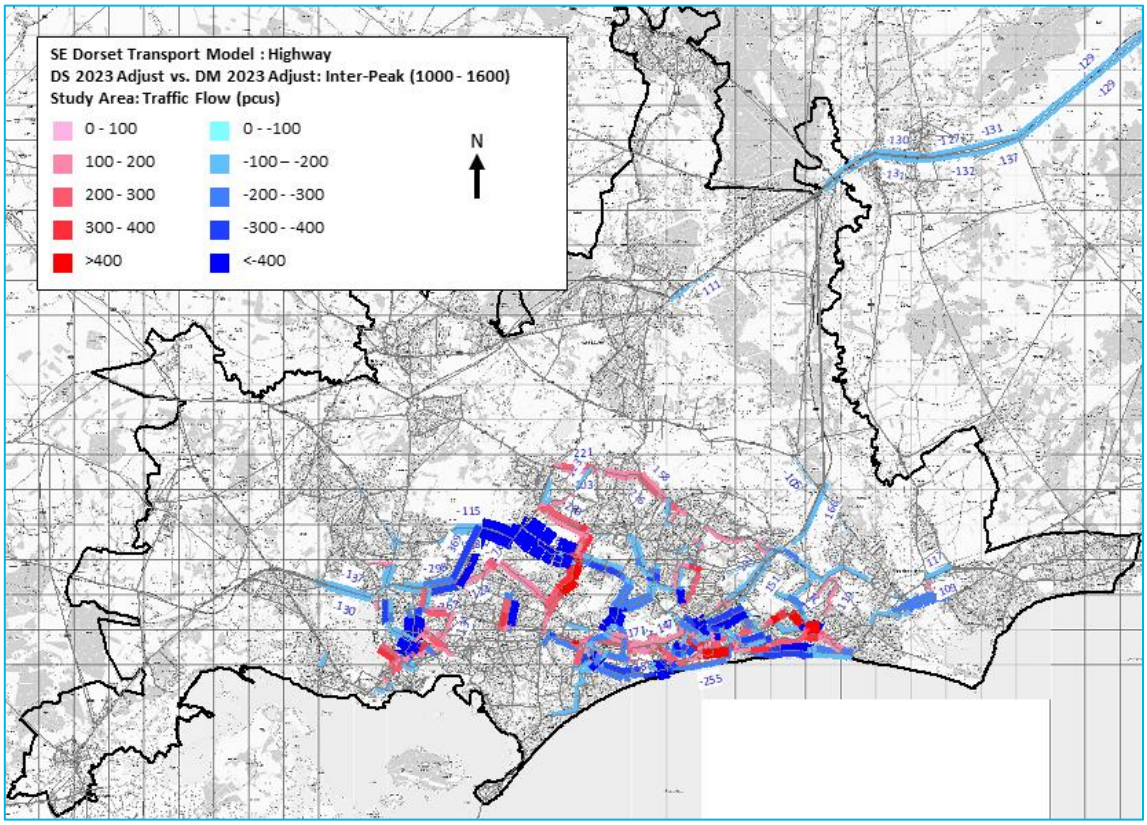


Figure 5.27: Highway Flows (actual) – 2023 Do-S vs Do-M, Inter-peak

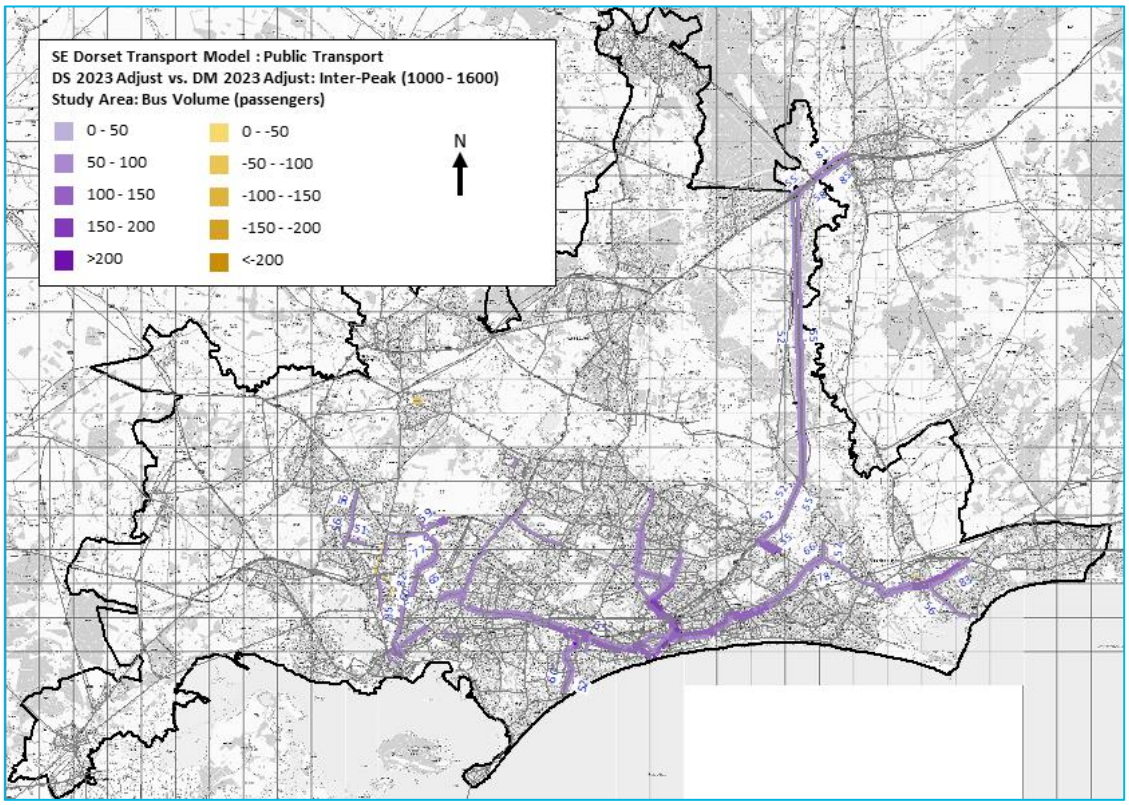


Figure 5.28: Bus Flows (passengers) - 2023 Do-S vs Do-M, Inter-peak

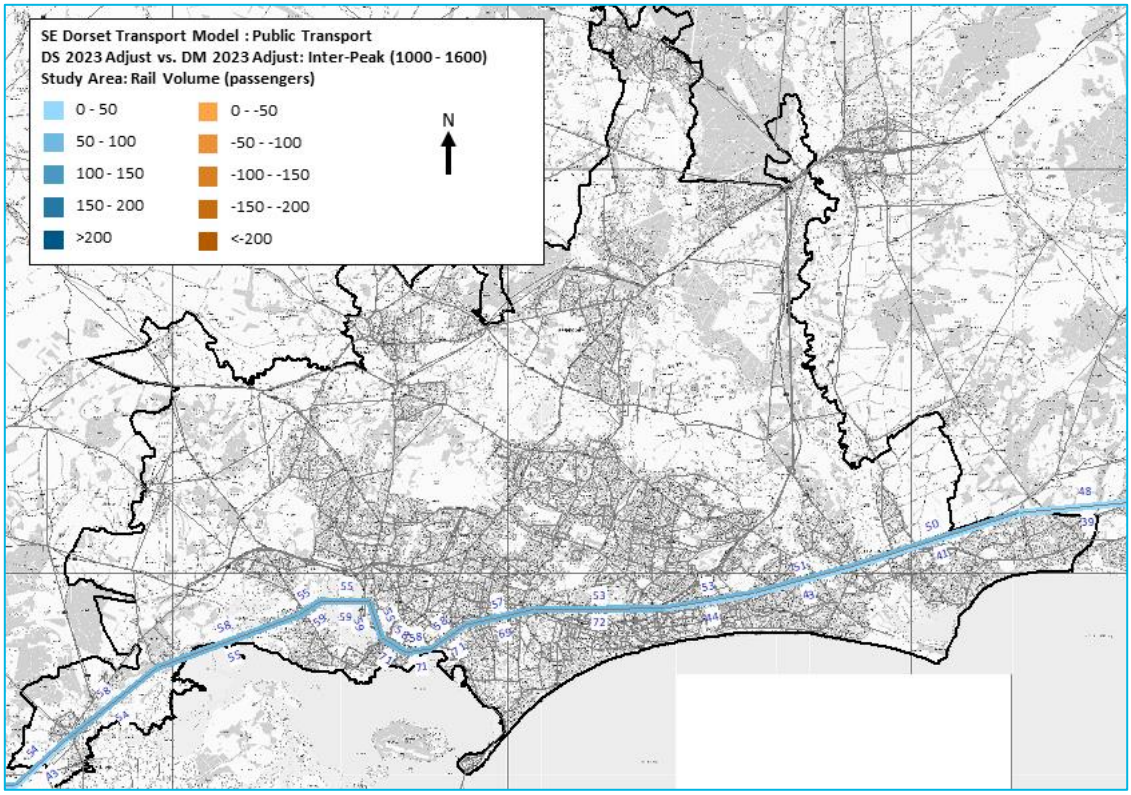


Figure 5.29: Rail Flows (passengers) - 2023 Do-S vs Do-M, Inter-peak

In terms of delays for those using the highway network, the 2023 model outputs suggest that there is a minor redistribution of delays across the area. The changes in delay are generally less than 30 and split in quantity between reductions and increases in delay. However, there are some more notable individual road and junction changes, including the B3093 northbound approach to the A35 junction in

Poole (approximately 60 second increase) and the Bournemouth West junction on the A338 (approximately 80 second increase).

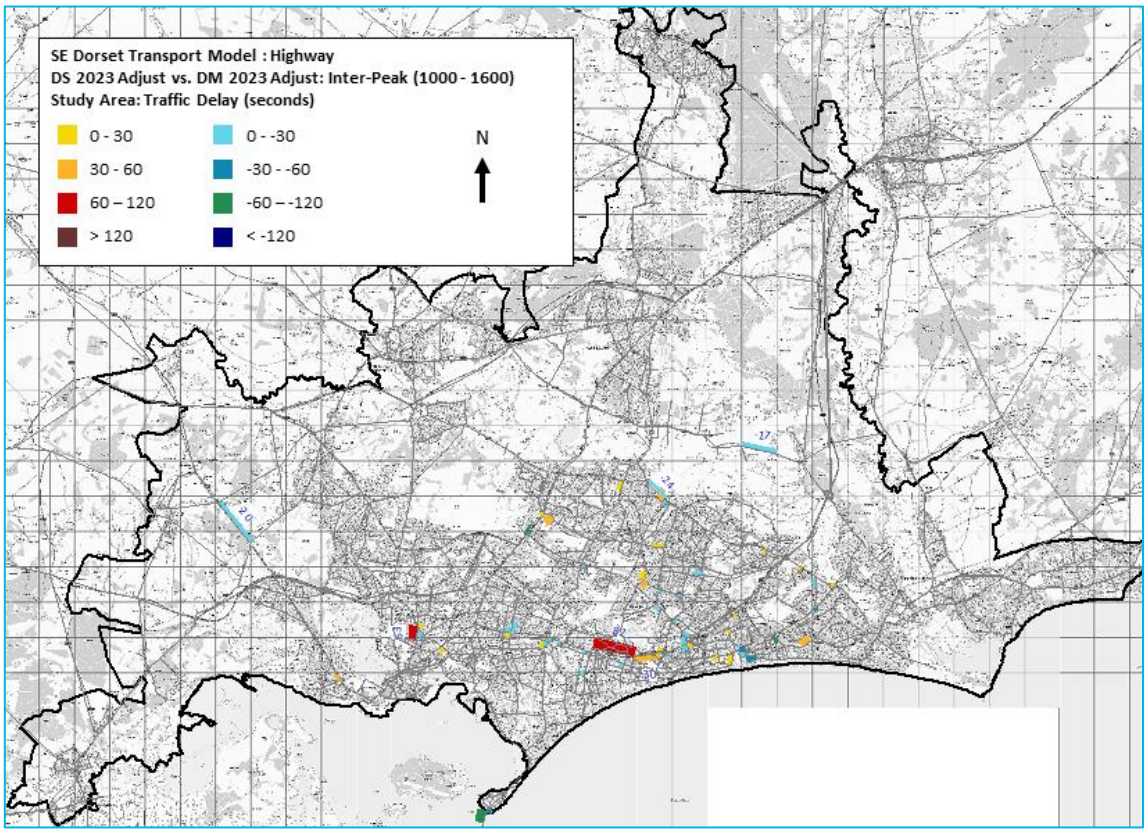


Figure 5.30: Link Delays (seconds) – 2023 Do-S vs Do-M, Inter-peak

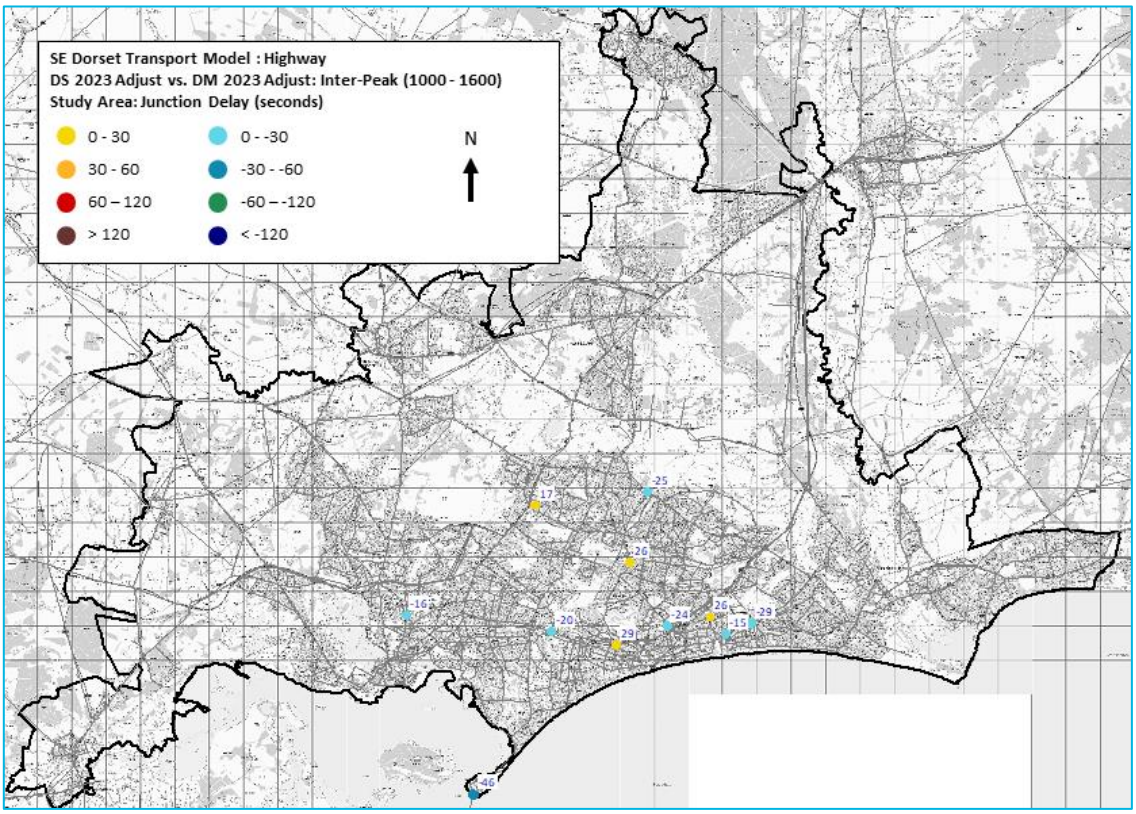


Figure 5.31: Node Delay (seconds) – 2023 Do-S vs Do-M, Inter-peak

When translated into journey times changes along the 12 key routes, the vast majority of routes are predicted to experience a reduction in journey times. These reductions are generally small, in the region of less than 2% (Table 5.9). The A338 has a noticeable increase in journey time with the interventions in place, between approximately 5% and 20%, which is due to the closure of parallel routes to private cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338.

Table 5.9: Journey Time Changes - 2023 Do-Minimum vs 2023 Do-Something: Interpeak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:17:48	00:15:49	-11.1%
	Westbound	11.4	00:16:35	00:14:52	-10.4%
A31	**Eastbound**	28	00:23:24	00:23:01	-1.6%
	Westbound	27.9	00:22:20	00:21:56	-1.8%
A338	**Northbound**	17.5	00:10:07	00:11:54	17.6%
	Southbound	17.4	00:14:34	00:15:14	4.6%
A341 / A3060	**Eastbound**	13.7	00:24:14	00:23:53	-1.4%
	Westbound	13.7	00:24:07	00:23:47	-1.4%
A347	**Northbound**	7.5	00:11:00	00:10:35	-3.8%
	Southbound	8.2	00:12:00	00:11:38	-3.1%
A348 / A3049	**Eastbound**	13.8	00:18:20	00:18:08	-1.1%
	Westbound	13.9	00:17:47	00:17:41	-0.6%

A349	**Northbound**	5.6	00:07:55	00:07:46	-1.9%
	Southbound	5.5	00:07:30	00:07:25	-1.1%
A35 E	**Eastbound**	11.7	00:19:00	00:19:04	0.4%
	Westbound	11.7	00:21:50	00:21:36	-1.1%
A35 W	**Eastbound**	17.8	00:25:46	00:25:01	-2.9%
	Westbound	18.5	00:24:26	00:24:09	-1.2%
A350	**Northbound**	13.9	00:14:17	00:14:20	0.4%
	Southbound	13.9	00:16:39	00:16:26	-1.3%
A351	**Eastbound**	7.2	00:07:05	00:07:04	-0.2%
	Westbound	7.2	00:06:18	00:06:16	-0.5%
B3073	**Eastbound**	15.2	00:22:12	00:22:03	-0.7%
	Westbound	15.1	00:19:32	00:19:17	-1.3%
**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*					

2023 Do Minimum vs Do Something: Afternoon Peak

In 2023 afternoon peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 will collectively result in a reasonable magnitude of change to the area's transport networks.

The outputs show some significant redistribution of traffic across the network but especially within the centre of Bournemouth (Figure 5.32). This can be attributed to the proposed road closures and 20 mph zones across the area. Key changes in traffic include reductions in traffic of over 500 vehicles along West Cliff Road, Glenferness Avenue and Wallisdown Road. There will be a large increase in traffic around alternative routes to avoid Lansdowne Roundabout including along Gervis Road (400 vehicles across both directions) and A35 St Pauls Road (300 vehicles leading to St Pauls Roundabout).

The smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially when considered alongside the travel plan measures (Figure 5.33 and Figure 5.34). Overall, there is predicted to be an increase in public transport use of approximately 19% across the whole area, which may be supported by a reasonable number of people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the measures.

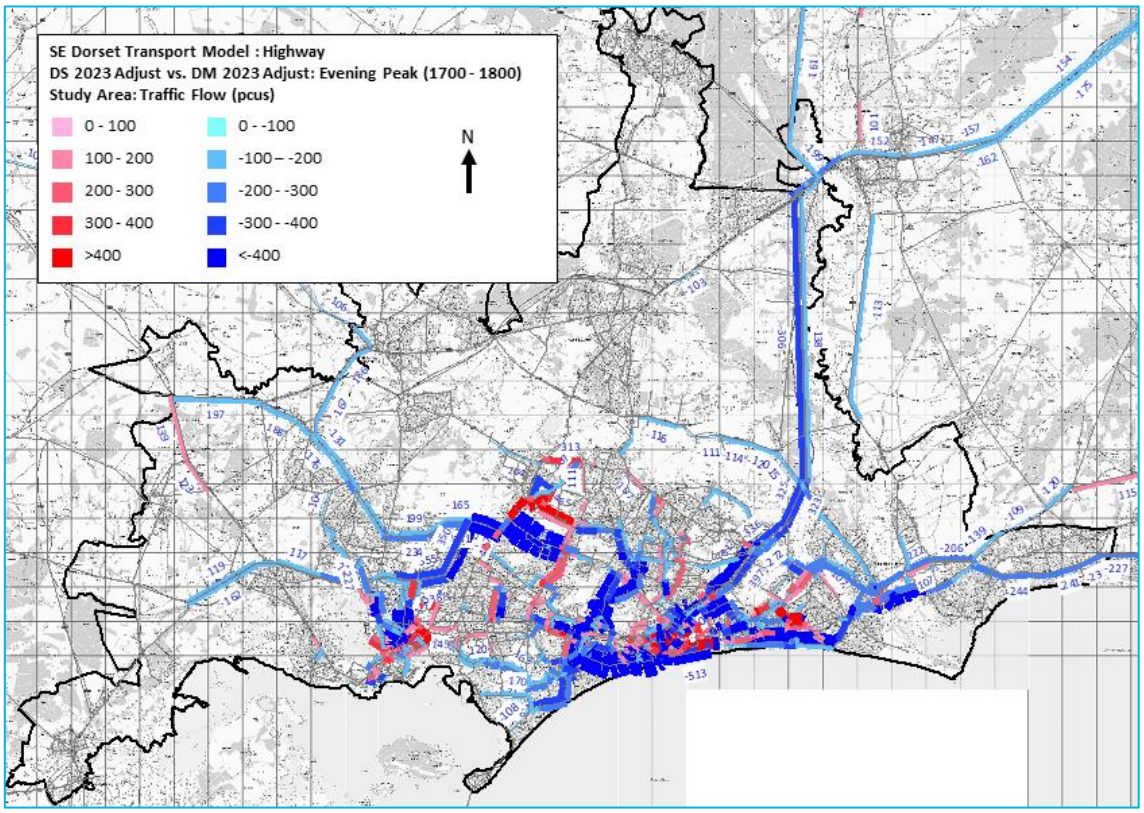


Figure 5.32: Highway Flows (actual) – 2023 Do-S vs Do-M, Afternoon Peak

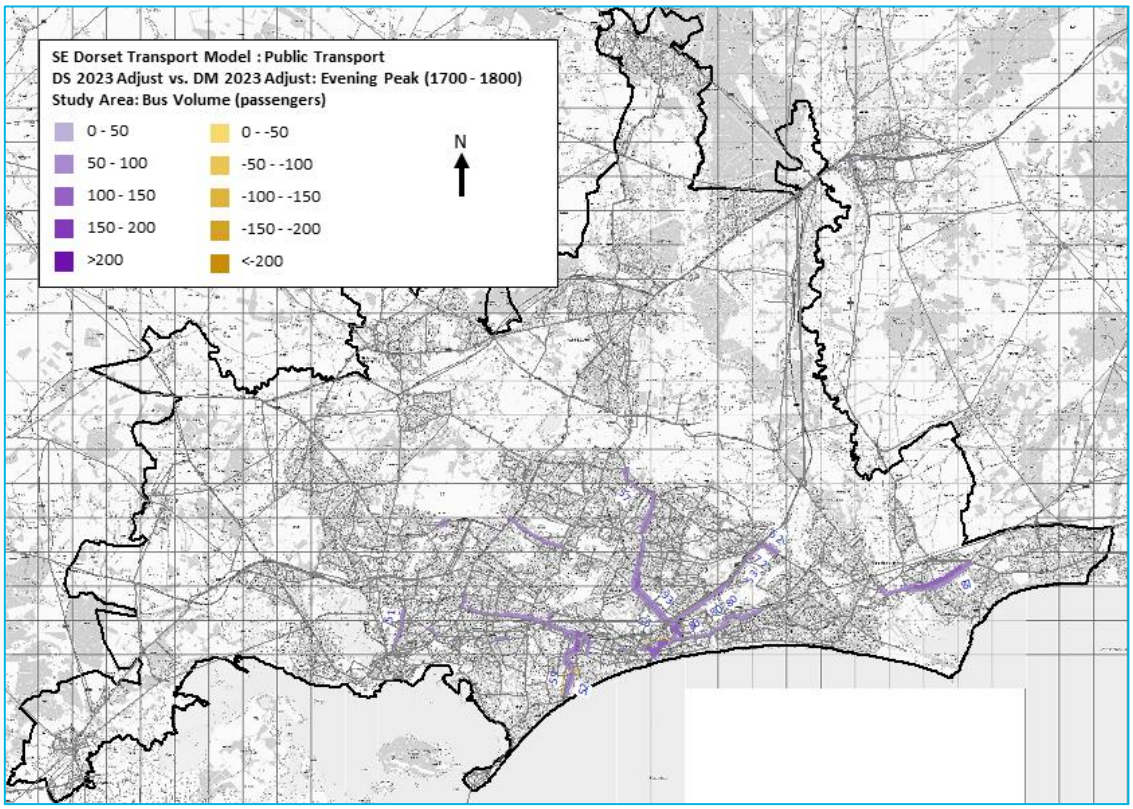


Figure 5.33: Bus Flows (passengers) - 2023 Do-S vs Do-M, Afternoon Peak

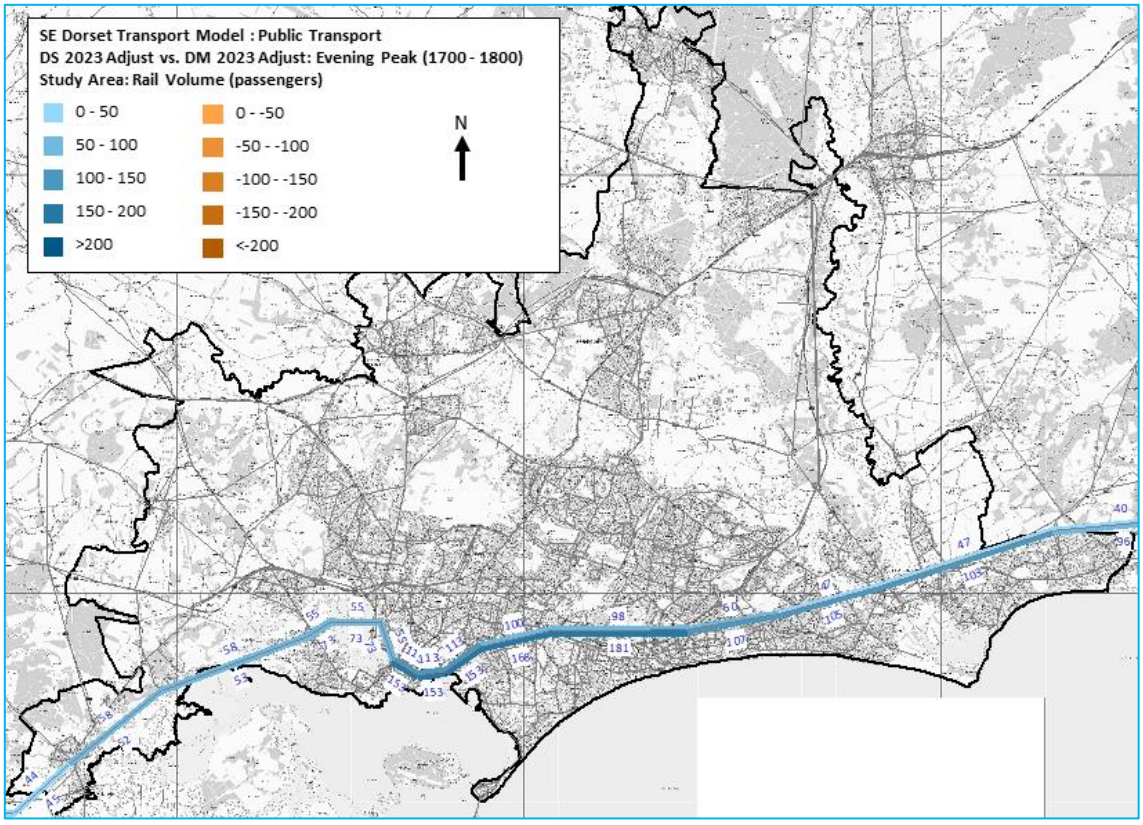


Figure 5.34: Rail Flows (passengers) - 2023 Do-S vs Do-M, Afternoon Peak

In terms of delays for those using the highway network, the 2023 afternoon peak model outputs suggest that there is also a redistribution of delays across the area. As with the morning peak, the changes in delay are generally relatively minor (between 30 to 60 seconds) and split in quantity between reductions and increases in delay. However, there are some notable individual road and

junction changes, including the Alder Road approach to Wallisdown Roundabout (approximately 125 second increase) and the St Paul's Roundabout (approximately 95 second increase).

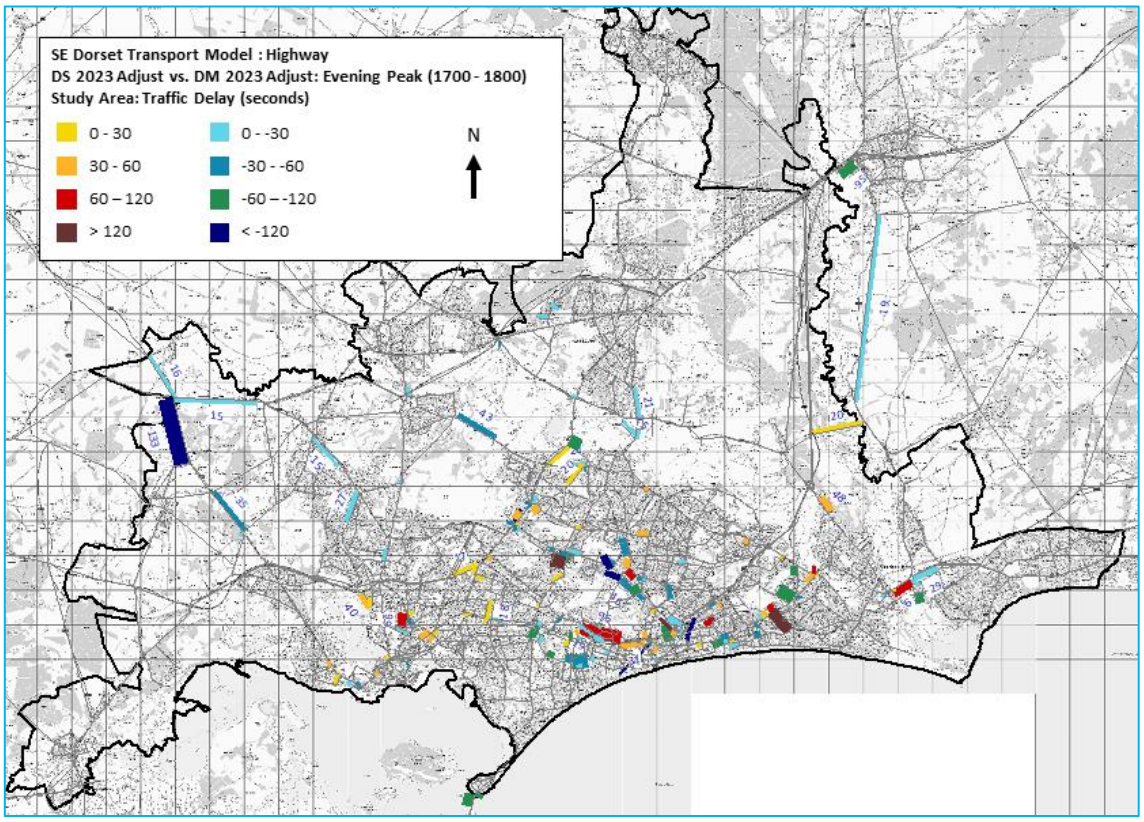


Figure 5.35: Link Delays (seconds) – 2023 Do-S vs Do-M, Afternoon Peak

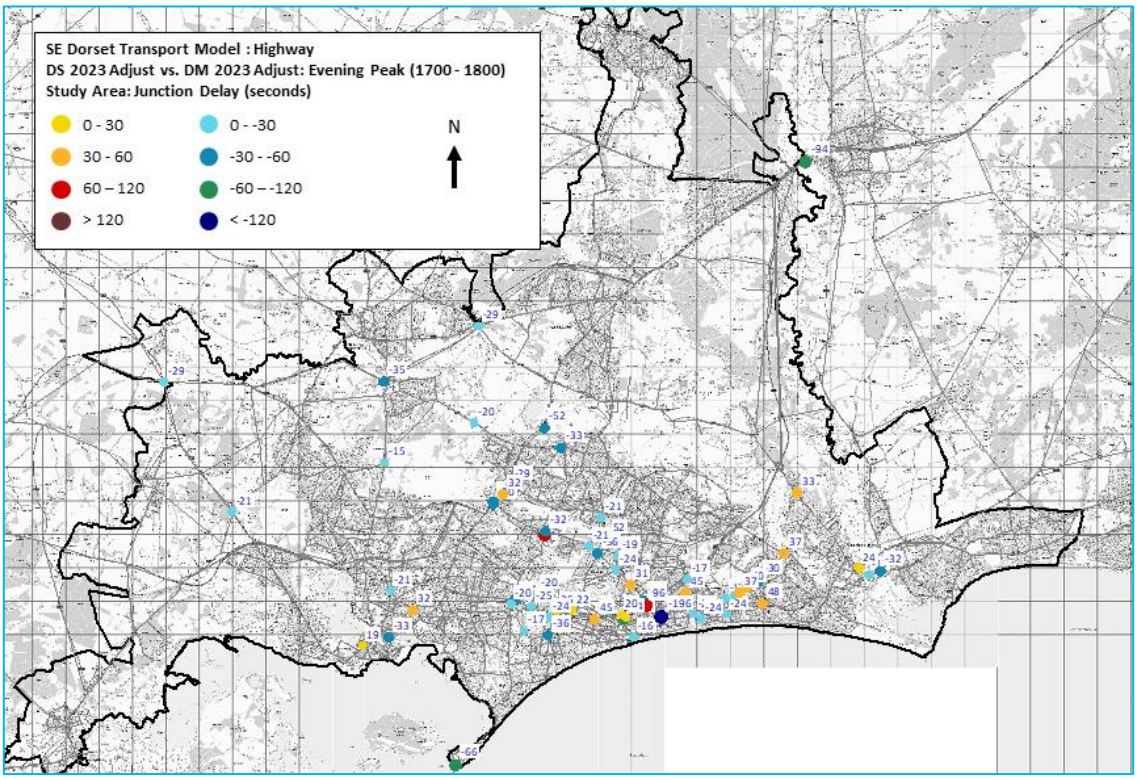


Figure 5.36: Node Delay (seconds) – 2023 Do-S vs Do-M, Afternoon Peak

When translated into journey times changes along the 12 key routes, the vast majority of routes are predicted to experience a reduction in journey times. These reductions are generally small, in the region of less than 5% to 10% (Table 5.10). The A338 northbound has a noticeable increase in journey time with the interventions in place, of approximately 35%, which is due to the closure of parallel routes to private cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338.

Table 5.10: Journey Time Changes - 2023 Do-Minimum vs 2023 Do-Something: PM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	Eastbound	11.4	00:24:35	00:18:17	-25.7%
	Westbound	11.4	00:21:37	00:18:17	-15.4%
A31	Eastbound	28	00:25:28	00:24:36	-3.4%
	Westbound	27.9	00:31:35	00:28:10	-10.8%
A338	Northbound	17.5	00:13:41	00:18:40	36.4%
	Southbound	17.4	00:15:02	00:15:08	0.6%
A341 / A3060	Eastbound	13.7	00:27:43	00:26:30	-4.4%
	Westbound	13.7	00:27:54	00:26:13	-6.0%
A347	Northbound	7.5	00:11:09	00:10:55	-2.1%
	Southbound	8.2	00:13:26	00:12:26	-7.4%
A348 / A3049	Eastbound	13.8	00:23:01	00:22:29	-2.4%
	Westbound	13.9	00:21:32	00:20:01	-7.1%
A349	Northbound	5.6	00:10:27	00:09:31	-9.0%

	Southbound	5.5	00:08:13	00:07:54	-4.0%
A35 E	**Eastbound**	11.7	00:21:41	00:23:00	6.1%
	Westbound	11.7	00:25:14	00:25:23	0.6%
A35 W	**Eastbound**	17.8	00:28:00	00:26:56	-3.8%
	Westbound	18.5	00:27:49	00:26:29	-4.8%
A350	**Northbound**	13.9	00:21:16	00:19:51	-6.6%
	Southbound	13.9	00:22:24	00:21:58	-1.9%
A351	**Eastbound**	7.2	00:07:06	00:07:05	-0.3%
	Westbound	7.2	00:06:23	00:06:19	-1.0%
B3073	**Eastbound**	15.2	00:22:36	00:22:48	0.8%
	Westbound	15.1	00:19:53	00:19:26	-2.3%
**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*					

2031 Do Minimum vs Do Something: Morning Peak

In the 2031 morning peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 and Table 5.6 will collectively result in a significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic around the study area with a high proportion of roads seeing a reduction in traffic due to the number of bus-related interventions in this forecast year which has involved a shift of vehicles off the network and onto buses (Figure 5.37). There is still an obvious redistribution of trips due to the road closures which were added in 2023. The model outputs suggest that the A338 would see a decrease in traffic, with the area around Holdenhurst predicted to experience a decrease of 500 vehicles northbound and 800 southbound due to the shift of cars to public transport. The centre of Christchurch is also forecast to experience a of around 300 vehicles in each direction, with all routes into Poole also predicted to experience reduced vehicle numbers.

There are still several vehicular route redistributions associated with the road closures introduced in the first period. However, as noted previously, the smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially when considered alongside the other interventions (Figure 5.38 and Figure 5.39). Overall, there is predicted to be an increase in public transport use of approximately 200% across the whole area, which may be significantly driven by people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the 2023 measures.

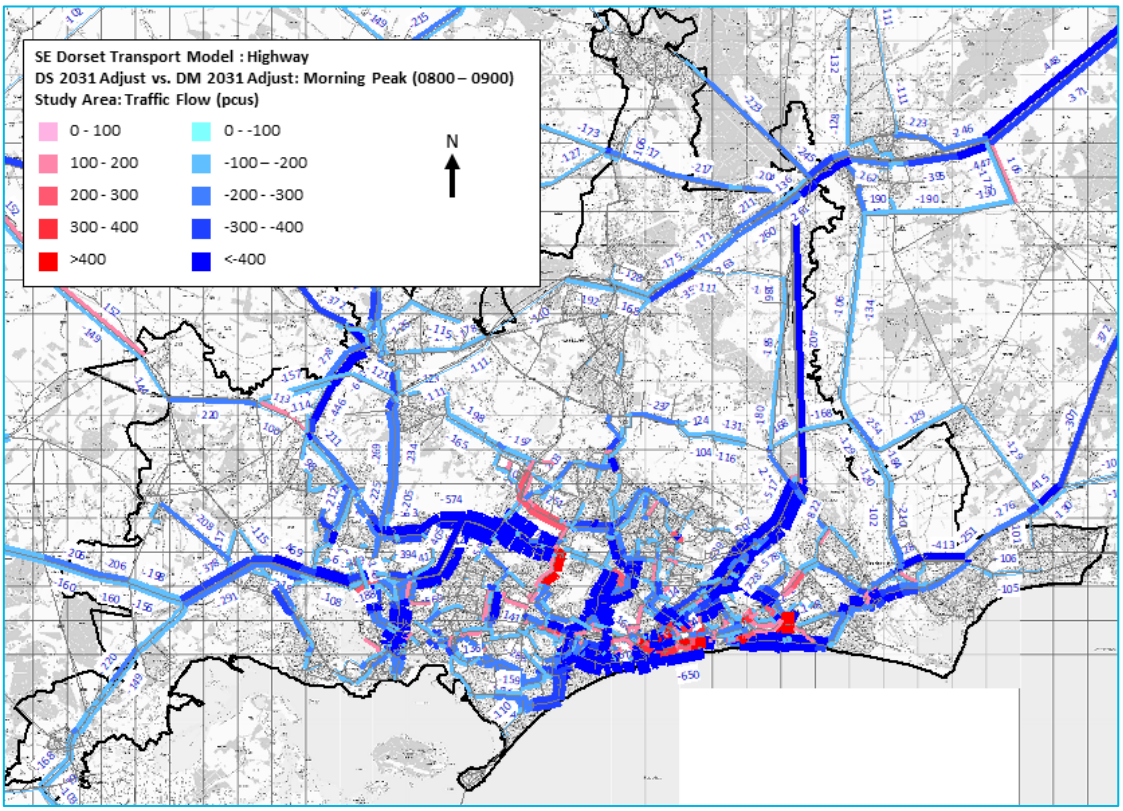


Figure 5.37: Highway Flows (actual) – 2031 Do-S vs Do-M, Morning Peak

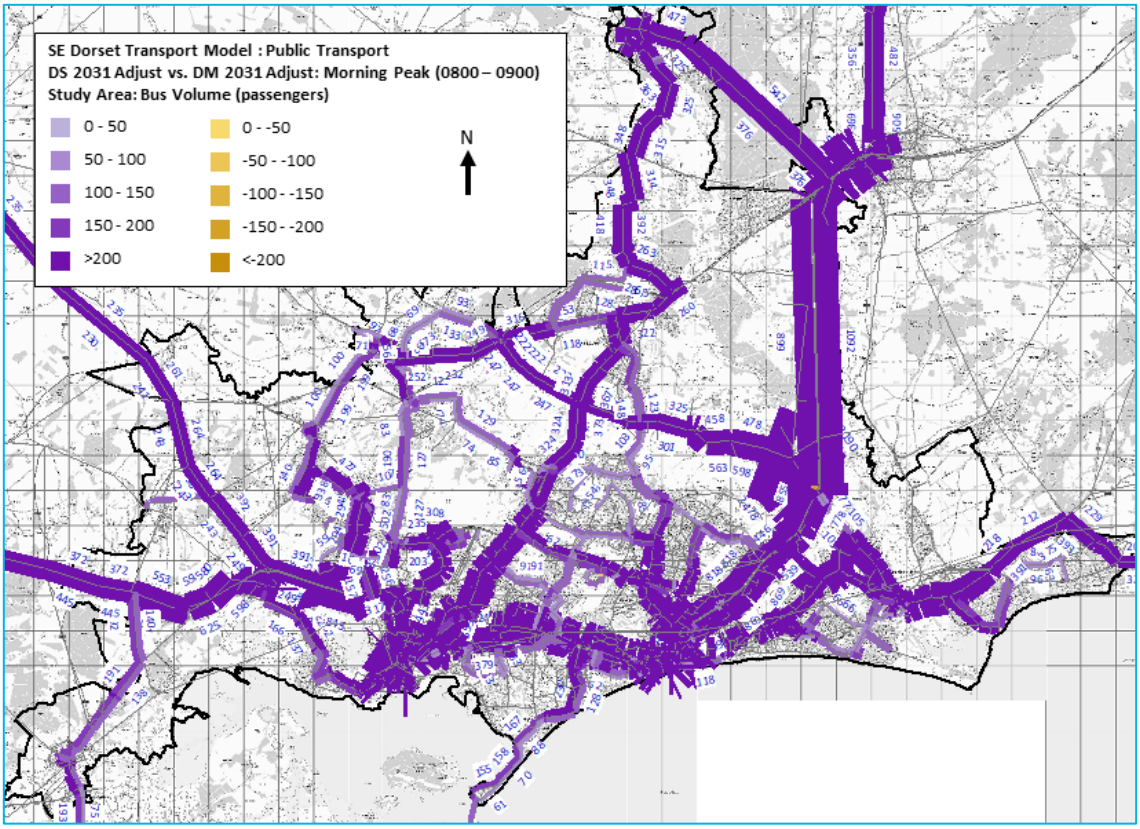


Figure 5.38: Bus Flows (passengers) - 2031 Do-S vs Do-M, Morning Peak

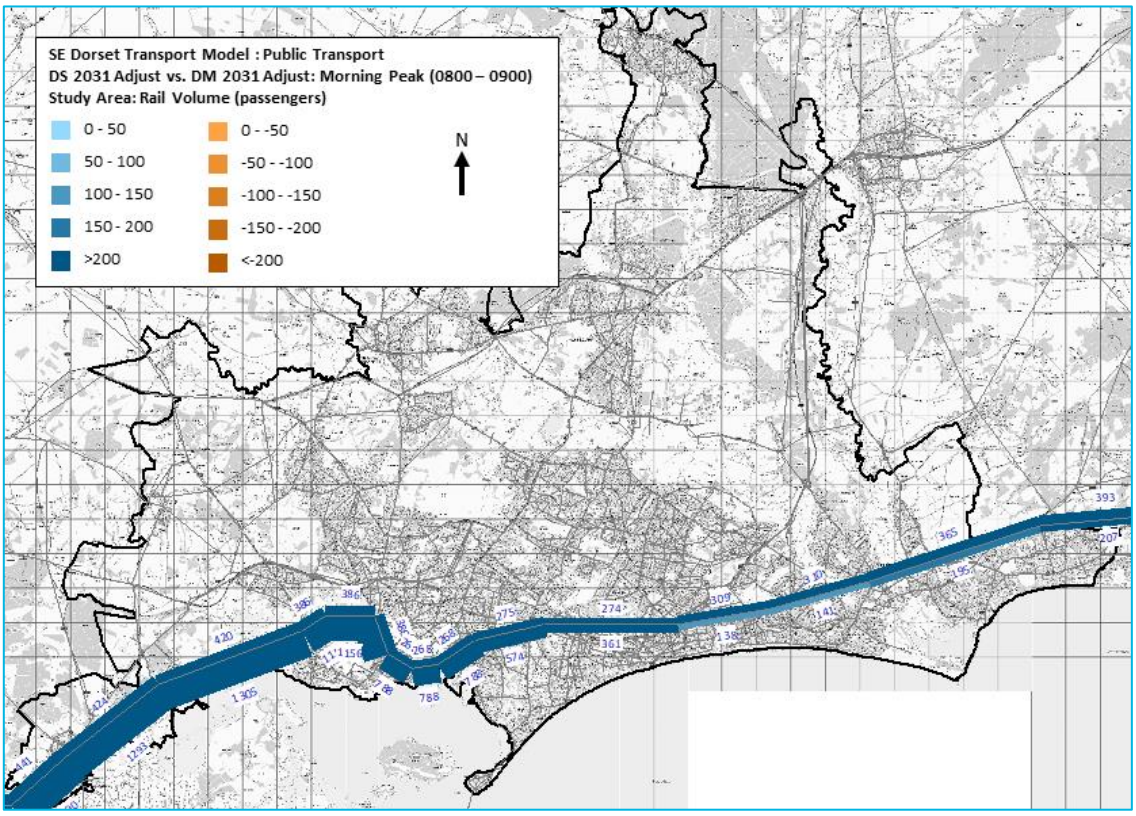


Figure 5.39: Rail Flows (passengers) - 2031 Do-S vs Do-M, Morning Peak

In terms of delays for those using the highway network, the 2031 model outputs suggest that there is a redistribution of delays across the area. However, whilst many of the changes in delay are generally relatively minor (between 30 to 60 seconds), there is a dominance of reductions across the area. There are some notable individual road and junction changes, including the on the eastbound approach to the Bournemouth West roundabout (approximately 80 second increase) and the A31/A350 junction (up to a two-minute decrease).

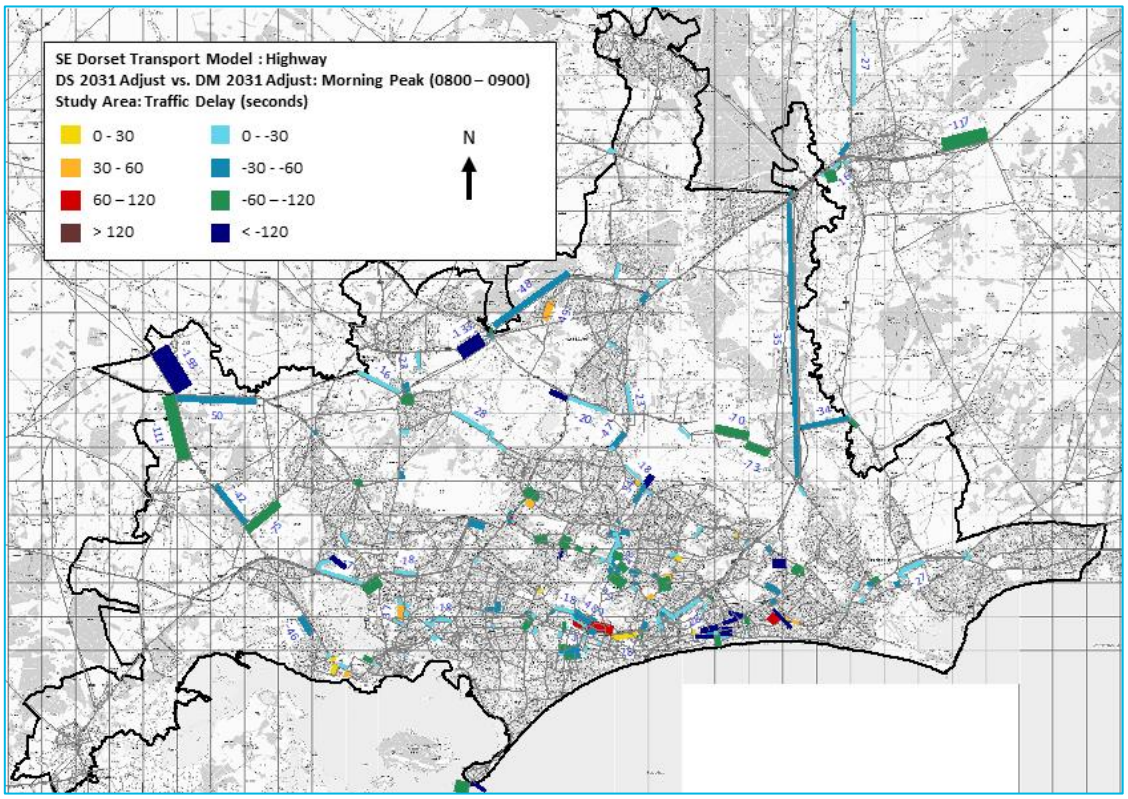


Figure 5.40: Link Delays (seconds) – 2031 Do-S vs Do-M, Morning Peak

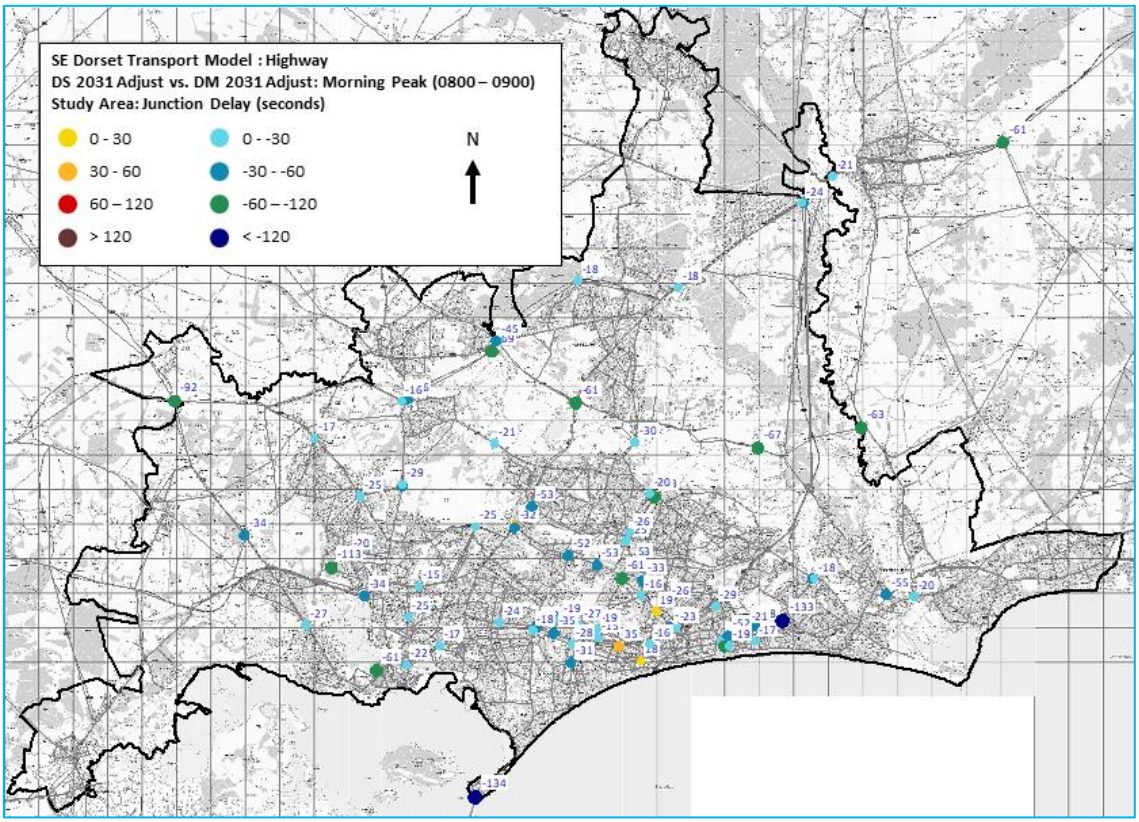


Figure 5.41: Node Delay (seconds) – 2031 Do-S vs Do-M, Morning Peak

When translated into journey times changes along the 12 key routes, all but one of the routes are predicted to experience a reduction in journey times. These reductions are relatively significant, in the region of 10% to 20% (Table 5.11). The A338 northbound direction has a noticeable increase in journey time with the interventions in place, approximately 10%, which is due to the closure of parallel

routes to private cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338. However, this is much less significant than in the first assessment period (2023), which suggests that the interventions outlined in Table 5.6 go a long way towards mitigating the impact of the previous road closures.

Table 5.11: Journey Time Changes - 2031 Do-Minimum vs 2031 Do-Something: AM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	Eastbound	11.4	00:22:17	00:18:44	-15.9%
	Westbound	11.4	00:22:16	00:15:23	-30.9%
A31	Eastbound	28	00:31:48	00:25:25	-20.1%
	Westbound	27.9	00:25:43	00:22:41	-11.8%
A338	Northbound	17.5	00:12:39	00:13:40	8.1%
	Southbound	17.4	00:17:09	00:16:26	-4.2%
A341 / A3060	Eastbound	13.7	00:28:59	00:24:38	-15.0%
	Westbound	13.7	00:29:54	00:25:34	-14.5%
A347	Northbound	7.5	00:13:24	00:11:02	-17.8%
	Southbound	8.2	00:14:56	00:12:01	-19.5%
A348 / A3049	Eastbound	13.8	00:22:50	00:19:32	-14.5%
	Westbound	13.9	00:22:19	00:19:41	-11.8%
A349	Northbound	5.6	00:08:29	00:07:52	-7.3%
	Southbound	5.5	00:10:02	00:07:47	-22.3%
A35 E	Eastbound	11.7	00:23:44	00:20:13	-14.8%
	Westbound	11.7	00:27:57	00:23:08	-17.3%
A35 W	Eastbound	17.8	00:28:38	00:25:00	-12.7%
	Westbound	18.5	00:28:20	00:25:33	-9.8%
A350	Northbound	13.9	00:17:56	00:14:32	-19.0%
	Southbound	13.9	00:24:52	00:20:23	-18.0%
A351	Eastbound	7.2	00:07:20	00:07:04	-3.6%
	Westbound	7.2	00:06:30	00:06:20	-2.4%
B3073	Eastbound	15.2	00:22:36	00:20:38	-8.7%
	Westbound	15.1	00:23:08	00:20:27	-11.6%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

2031 Do Minimum vs Do Something: Inter-peak

In the 2031 inter-peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 and Table 5.6 will collectively result in a significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic around the study area with a high proportion of roads seeing a reduction in traffic due to the number of bus-related interventions in this forecast year which has involved a shift of vehicles off the network and onto buses (Figure 5.42). There is still an

obvious redistribution of trips due to the road closures which were added in 2023. The model outputs suggest that the central Bournemouth area will be most greatly impacted by these, although the surrounding areas will benefit. For example, there is a noticeable increase in traffic on sections of the alternative route around Lansdowne Roundabout (i.e. 150 vehicle increase heading westbound on Gervis Road) due to reduction in movements at Lansdowne Roundabout for private vehicles. The centre of Christchurch and all routes into Poole are also predicted to experience reduced vehicle numbers, albeit at a lower level than in the morning peak.

As noted previously, the smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially when considered alongside the other interventions (Figure 5.43 and Figure 5.44). Overall, there is predicted to be an increase in public transport use of approximately 300% across the whole area, which may be significantly driven by people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the measures.

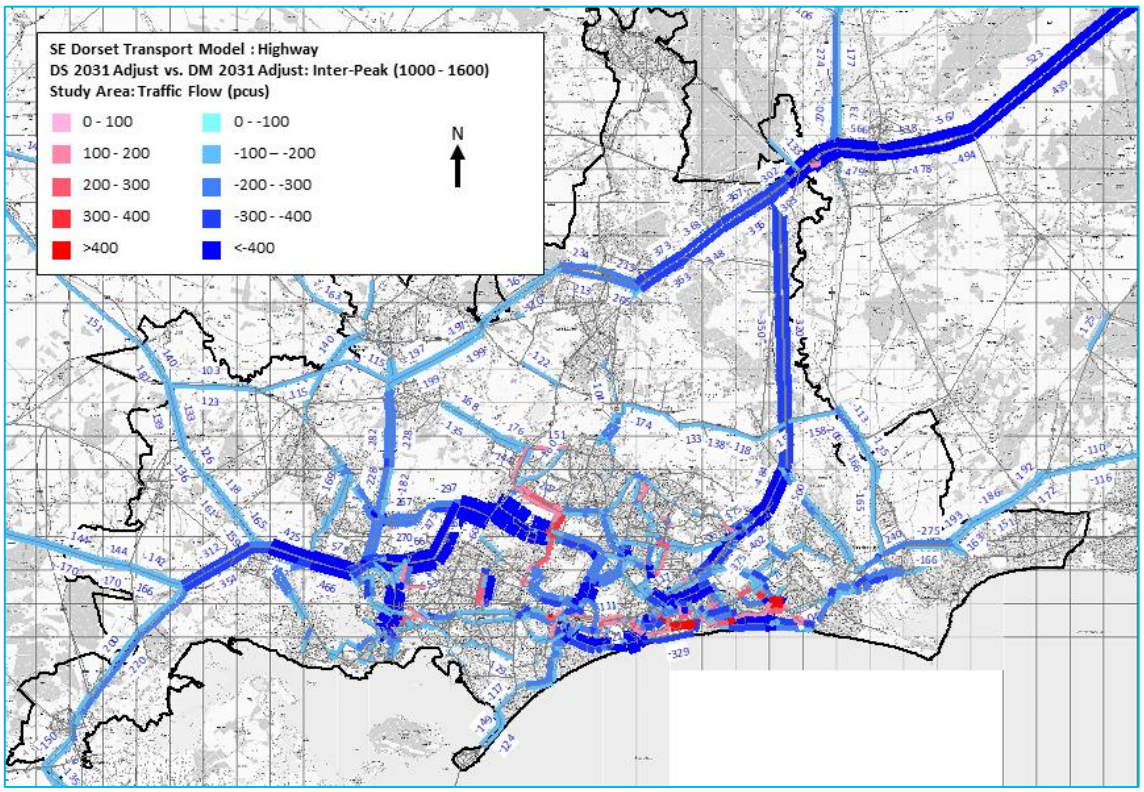


Figure 5.42: Highway Flows (actual) – 2031 Do-S vs Do-M, Inter-peak

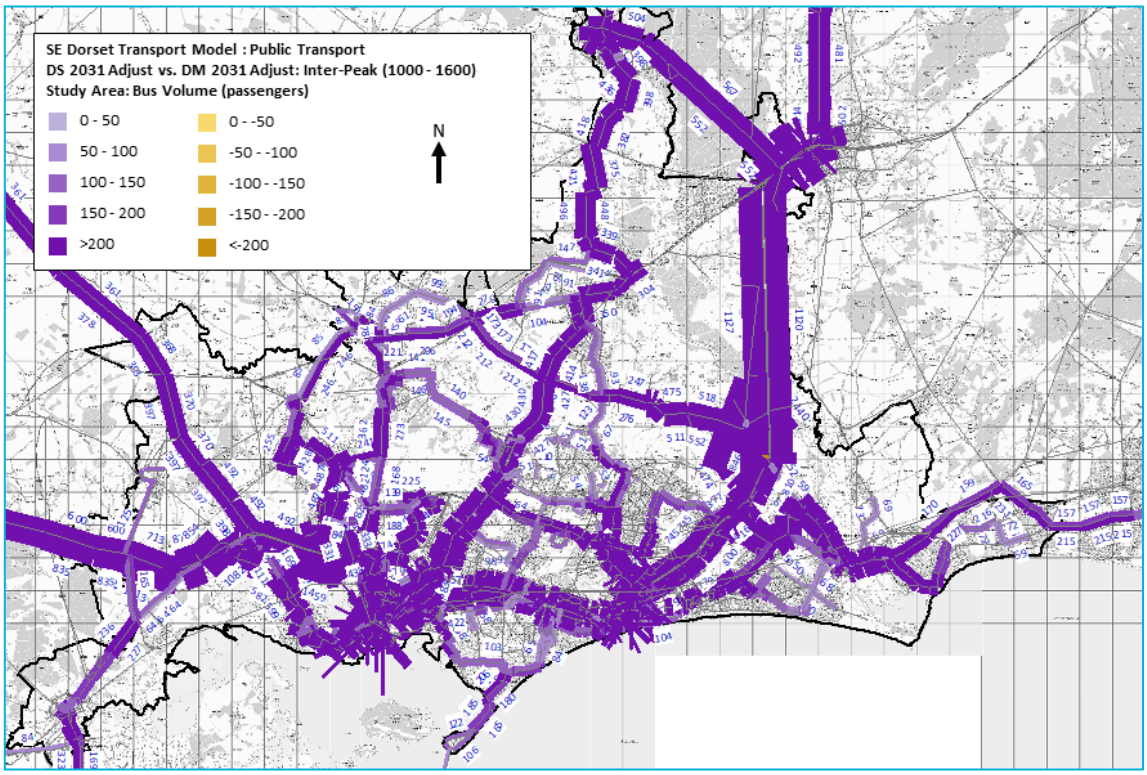


Figure 5.43: Bus Flows (passengers) - 2031 Do-S vs Do-M, Inter-peak

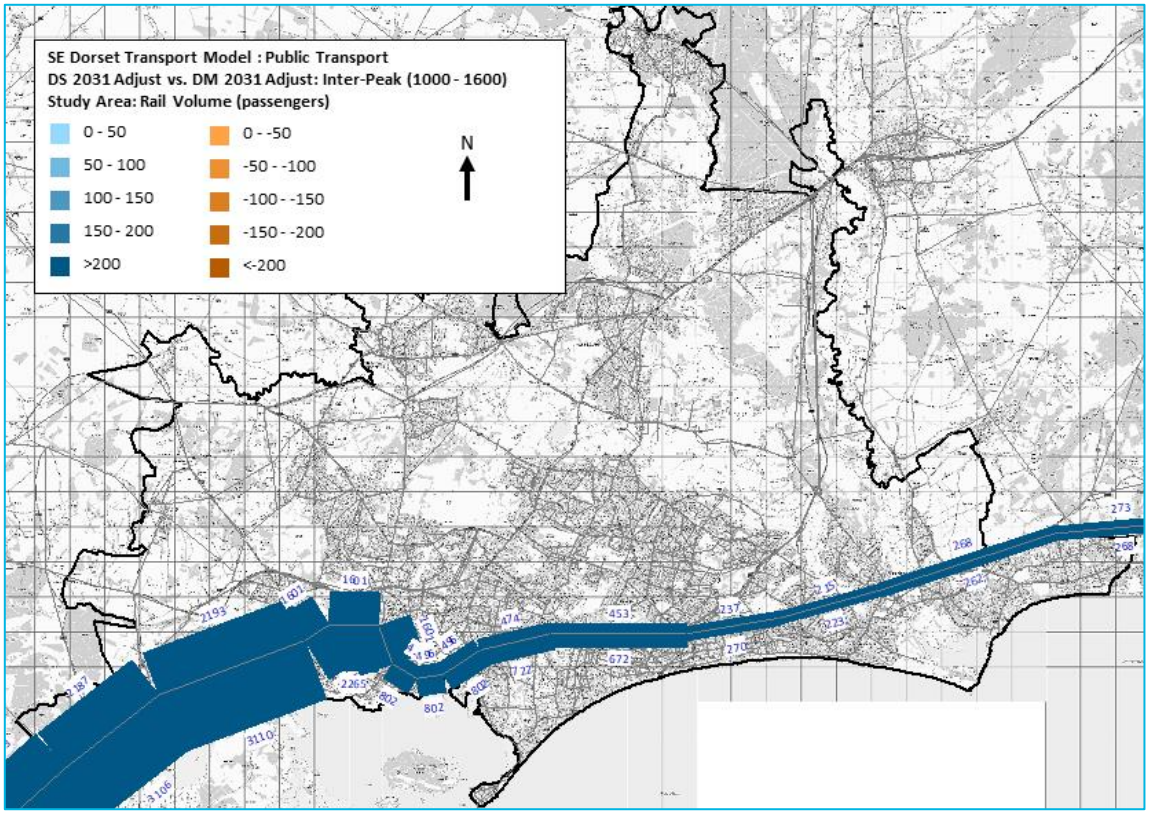


Figure 5.44: Rail Flows (passengers) - 2031 Do-S vs Do-M, Inter-peak

In terms of delays for those using the highway network, the 2031 model outputs suggest that there is a redistribution of delays across the area. However, whilst many of the changes in delay are generally relatively minor at less than 30 seconds), there is a dominance of reductions across the area. There are some more notable individual road and junction changes, including the on the eastbound

approach to the Bournemouth West roundabout (approximately 50 second increase) and the A350 junctions near Old Wareham Road (up to a one-minute decrease).

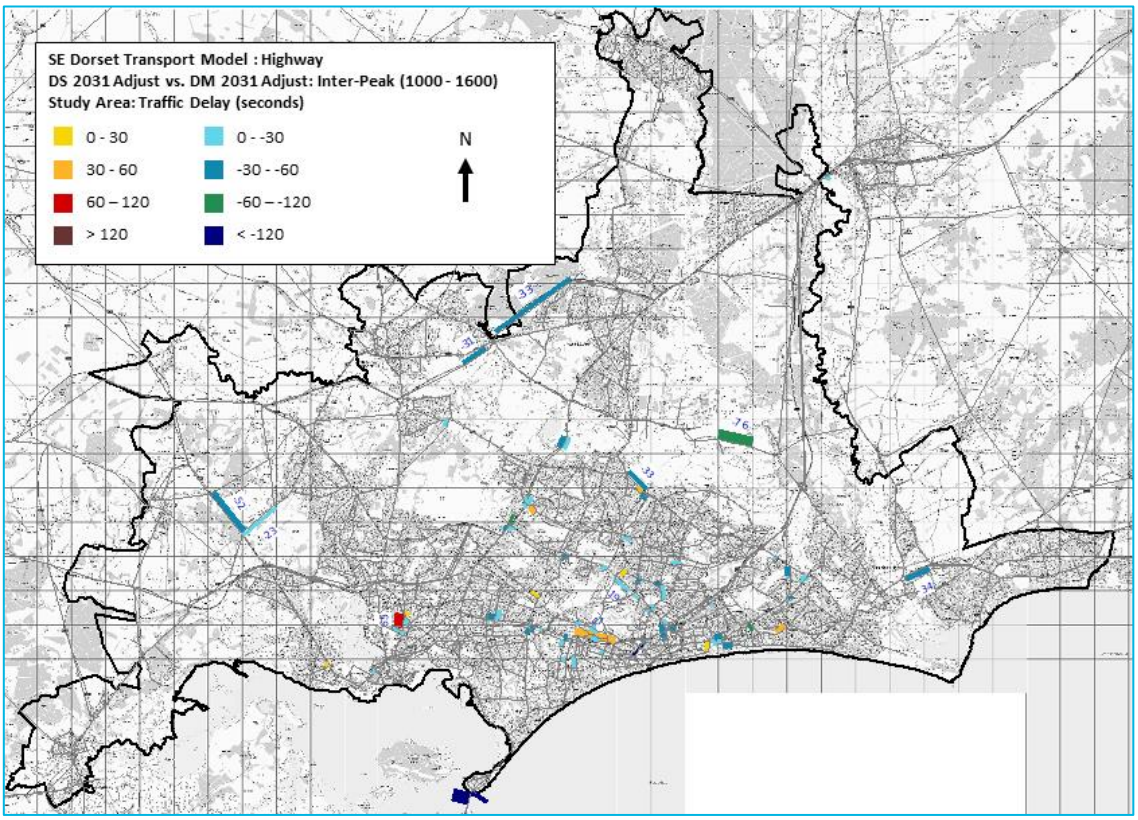


Figure 5.45: Link Delays (seconds) – 2031 Do-S vs Do-M, Inter-peak

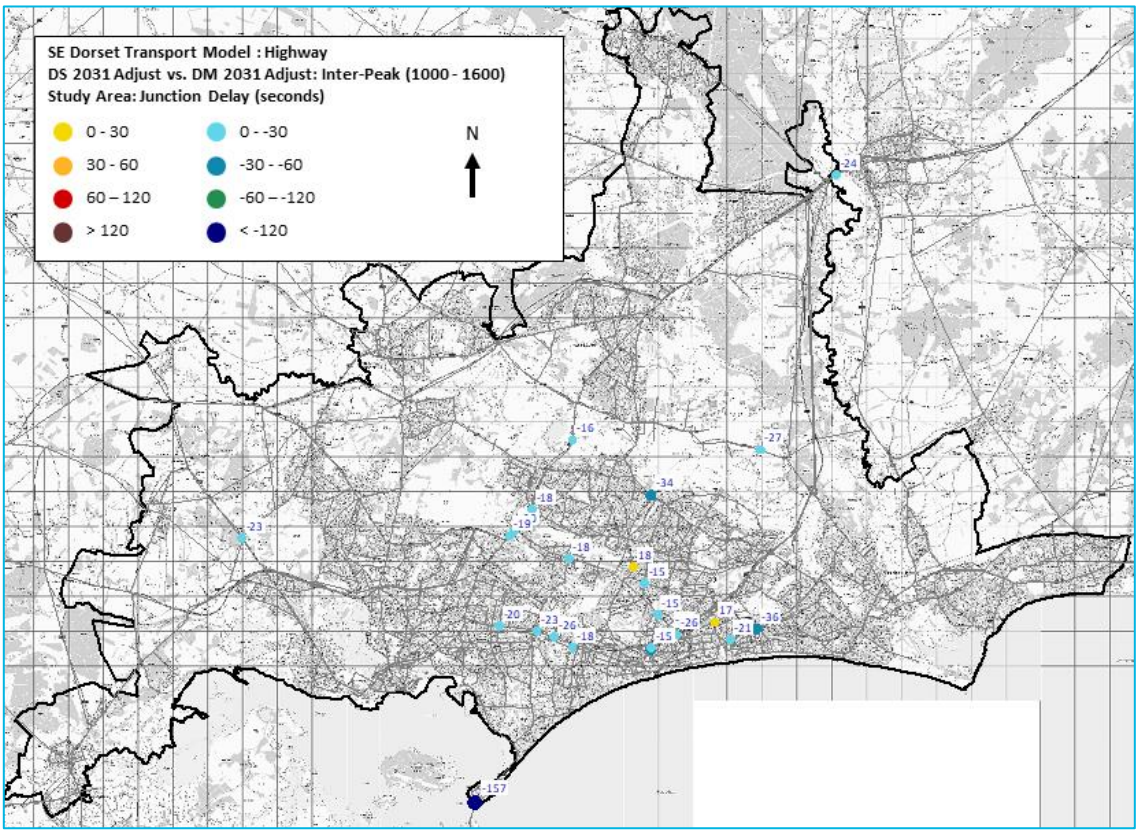


Figure 5.46: Node Delay (seconds) – 2031 Do-S vs Do-M, Inter-peak

When translated into journey times changes along the 12 key routes, the all but one of the routes are predicted to experience a reduction in journey times. These reductions are relatively significant, in the region of 5% to 10% (Table 5.12). The A3049/A347 route is predicted to benefit most significantly from the interventions, experiencing journey time reductions of around 15% in both directions. The A338 northbound direction has a noticeable increase in journey time with the interventions in place, approximately 6%, which is due to the closure of parallel routes to private cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338. However, this is still less significant than in 2023, which suggests that the interventions outlined in Table 5.6 go a long way towards mitigating the impact of the previous road closures.

Table 5.12: Journey Time Changes - 2031 Do-Minimum vs 2031 Do-Something: Interpeak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:18:42	00:15:33	-16.8%
	Westbound	11.4	00:17:22	00:14:37	-15.8%
A31	**Eastbound**	28	00:24:47	00:22:46	-8.1%
	Westbound	27.9	00:23:17	00:21:36	-7.2%
A338	**Northbound**	17.5	00:10:38	00:11:19	6.4%
	Southbound	17.4	00:15:17	00:14:40	-4.0%
A341 / A3060	**Eastbound**	13.7	00:24:48	00:23:34	-5.0%
	Westbound	13.7	00:24:51	00:23:28	-5.6%
A347	**Northbound**	7.5	00:11:20	00:10:29	-7.5%

	Southbound	8.2	00:12:16	00:11:32	-6.0%
A348 / A3049	**Eastbound**	13.8	00:19:22	00:17:38	-9.0%
	Westbound	13.9	00:18:34	00:17:20	-6.6%
A349	**Northbound**	5.6	00:08:06	00:07:39	-5.6%
	Southbound	5.5	00:07:39	00:07:20	-4.1%
A35 E	**Eastbound**	11.7	00:19:31	00:18:43	-4.1%
	Westbound	11.7	00:22:42	00:20:28	-9.8%
A35 W	**Eastbound**	17.8	00:26:22	00:24:29	-7.1%
	Westbound	18.5	00:24:55	00:23:40	-5.0%
A350	**Northbound**	13.9	00:14:35	00:14:10	-2.9%
	Southbound	13.9	00:17:10	00:15:58	-7.0%
A351	**Eastbound**	7.2	00:07:08	00:07:00	-1.9%
	Westbound	7.2	00:06:21	00:06:14	-1.8%
B3073	**Eastbound**	15.2	00:22:50	00:21:20	-6.6%
	Westbound	15.1	00:20:16	00:19:17	-4.9%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

2031 Do Minimum vs Do Something: Afternoon Peak

In the 2031 afternoon peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 and Table 5.6 will collectively result in a significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic around the study area with a high proportion of roads seeing a reduction in traffic due to the number of bus-related interventions in this forecast year which has involved a shift of vehicles off the network and onto buses (Figure 5.47). There is still an obvious redistribution of trips due to the road closures which were added in 2023. The model outputs suggest that the central Bournemouth area will be most greatly impacted by these, although the surrounding areas will benefit. For example, there is a noticeable increase in traffic on sections of the alternative route around Lansdowne Roundabout (i.e. 300 vehicle increase heading westbound on Gervis Road) due to reduction in movements at Lansdowne Roundabout for private vehicles.

As with the other time periods, central Poole and Christchurch are forecast to experience widespread reductions in the number of vehicles on their roads. There is predicted a decrease in traffic along the B3093 through Longfleet in Poole, with an increase along the A350, B3068 and Parkstone Road suggesting a noticeable redistribution of traffic. In Christchurch, there is a reduction along Bridge Road of around 700 vehicles in the westbound direction, with an increase on the parallel route of the Christchurch Bypass which would suggest some redistribution of traffic as well as a shift from car to bus on this route.

As noted previously, the smaller number of vehicles present in many of the redistributions suggests that the interventions may be able to help increase the relative desirability of these modes relative to using cars, especially when considered alongside the other interventions (Figure 5.48 and Figure 5.49). Overall, there is predicted to be an increase in public transport use of approximately 250% across the whole area, which may be significantly driven by people swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the measures.

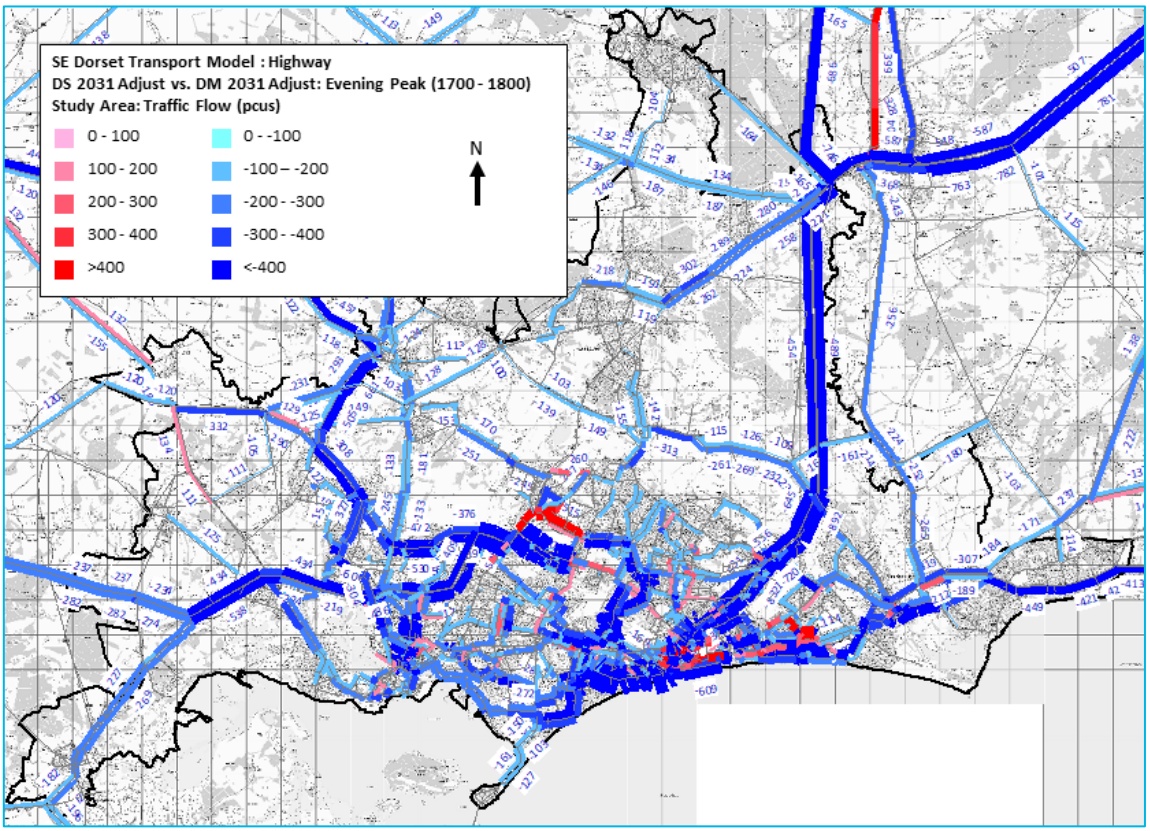


Figure 5.47: Highway Flows (actual) – 2031 Do-S vs Do-M, Afternoon Peak

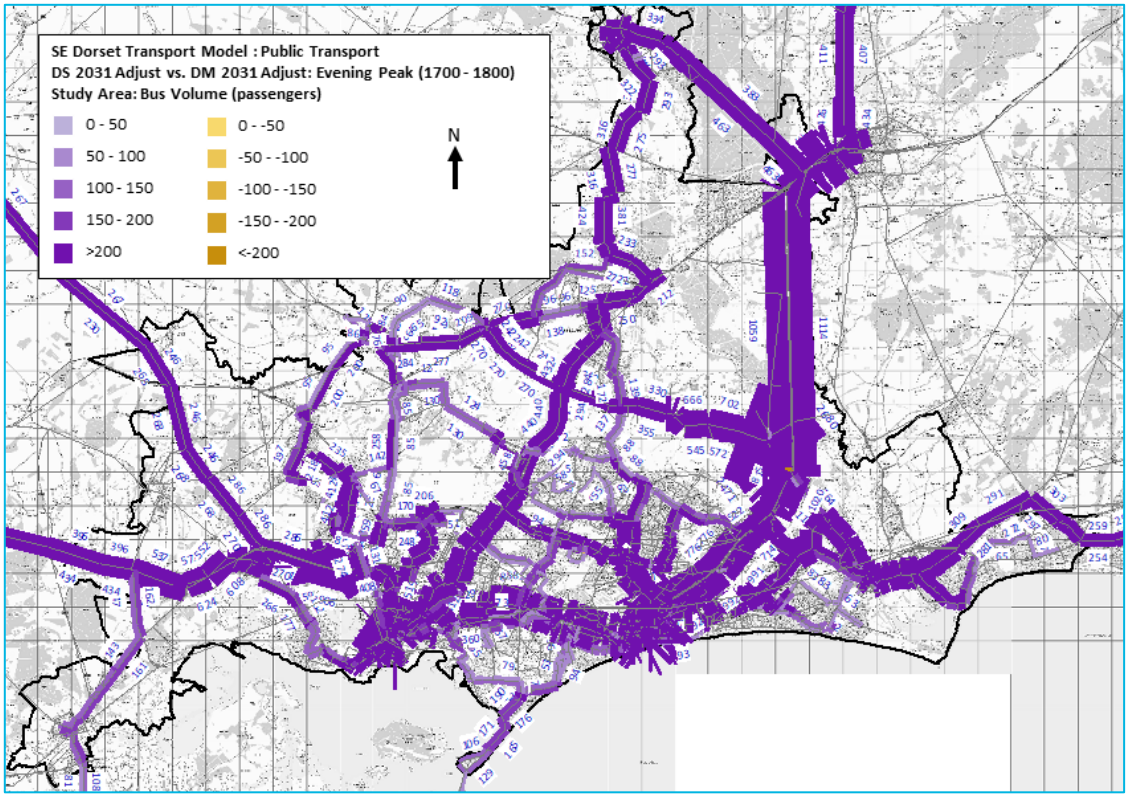


Figure 5.48: Bus Flows (passengers) - 2031 Do-S vs Do-M, Afternoon Peak

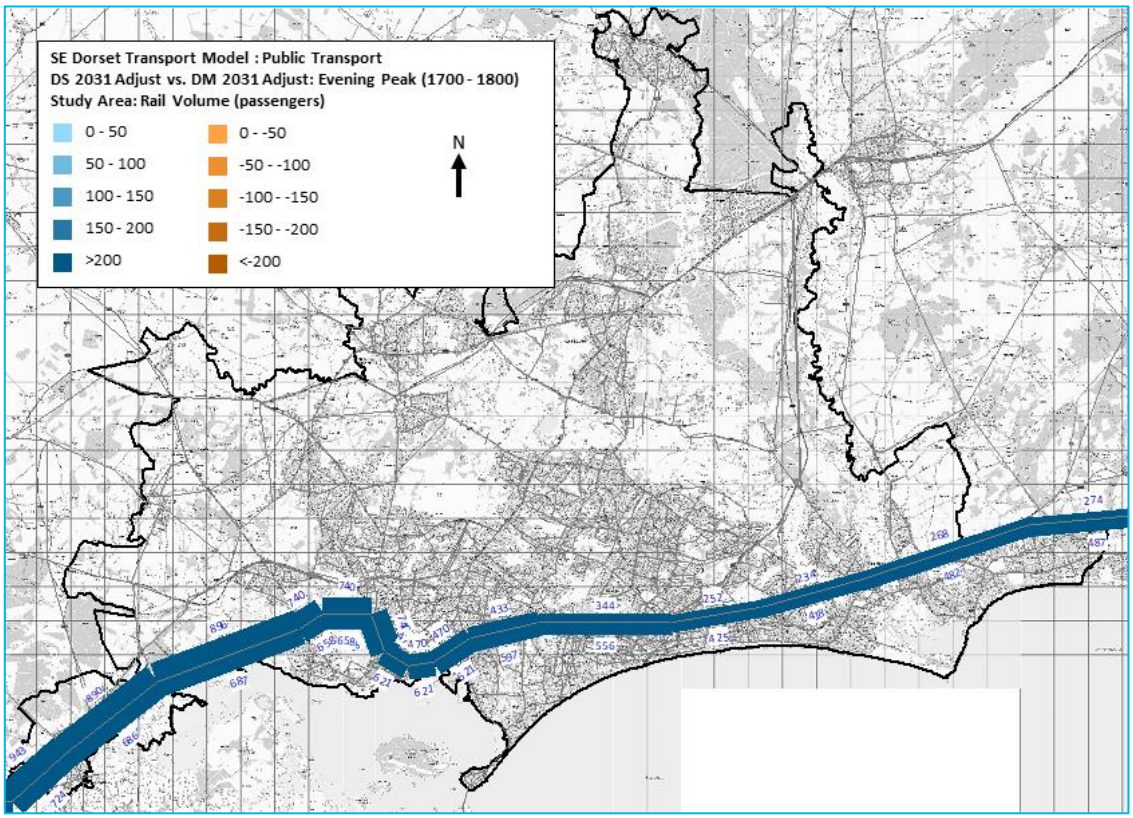


Figure 5.49: Rail Flows (passengers) - 2031 Do-S vs Do-M, Afternoon Peak

In terms of delays for those using the highway network, the 2031 model outputs suggest that there is a redistribution of delays across the area. However, whilst many of the changes in delay are generally relatively minor (between 30 to 60 seconds), there is a higher number of reductions across the area. There are some notable individual road and junction changes, including the on the Woodside Road arm of the junction with Seabourne Road (approximately 140 second increase) and along some sections of Bridge Road (up to 90 second decrease).

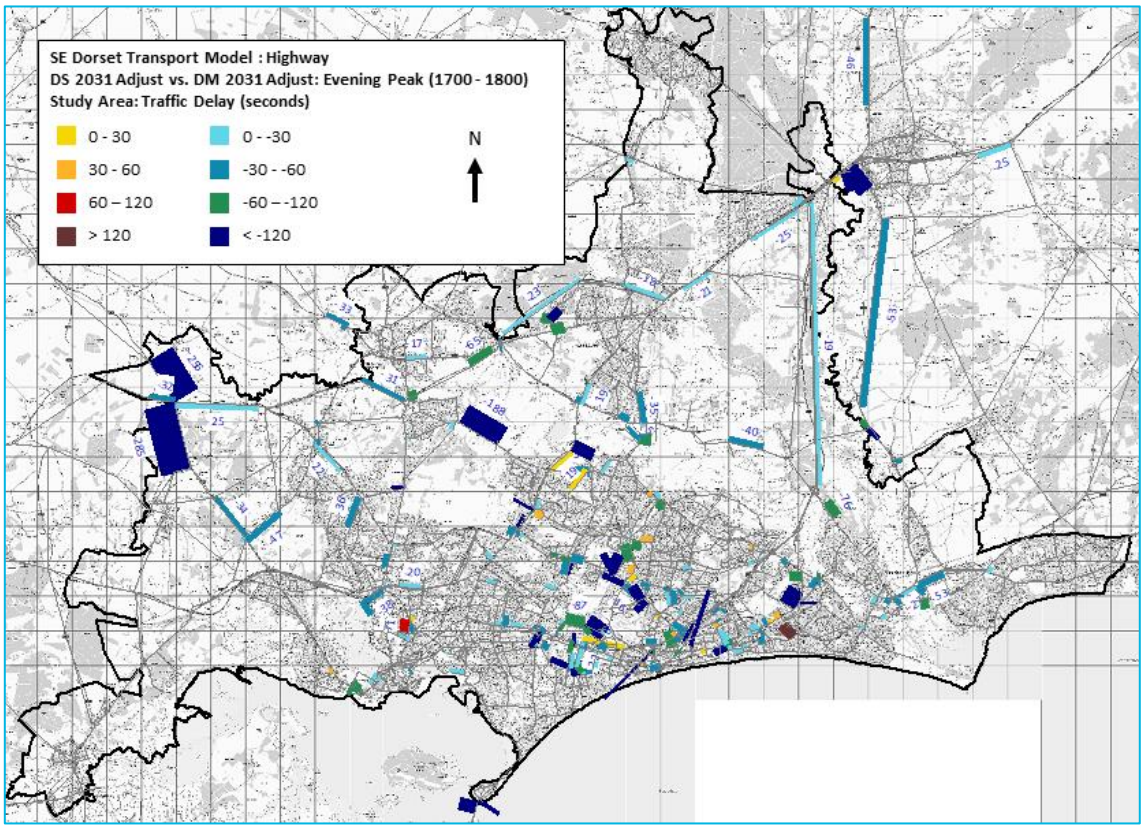


Figure 5.50: Link Delays (seconds) – 2031 Do-S vs Do-M, Afternoon Peak

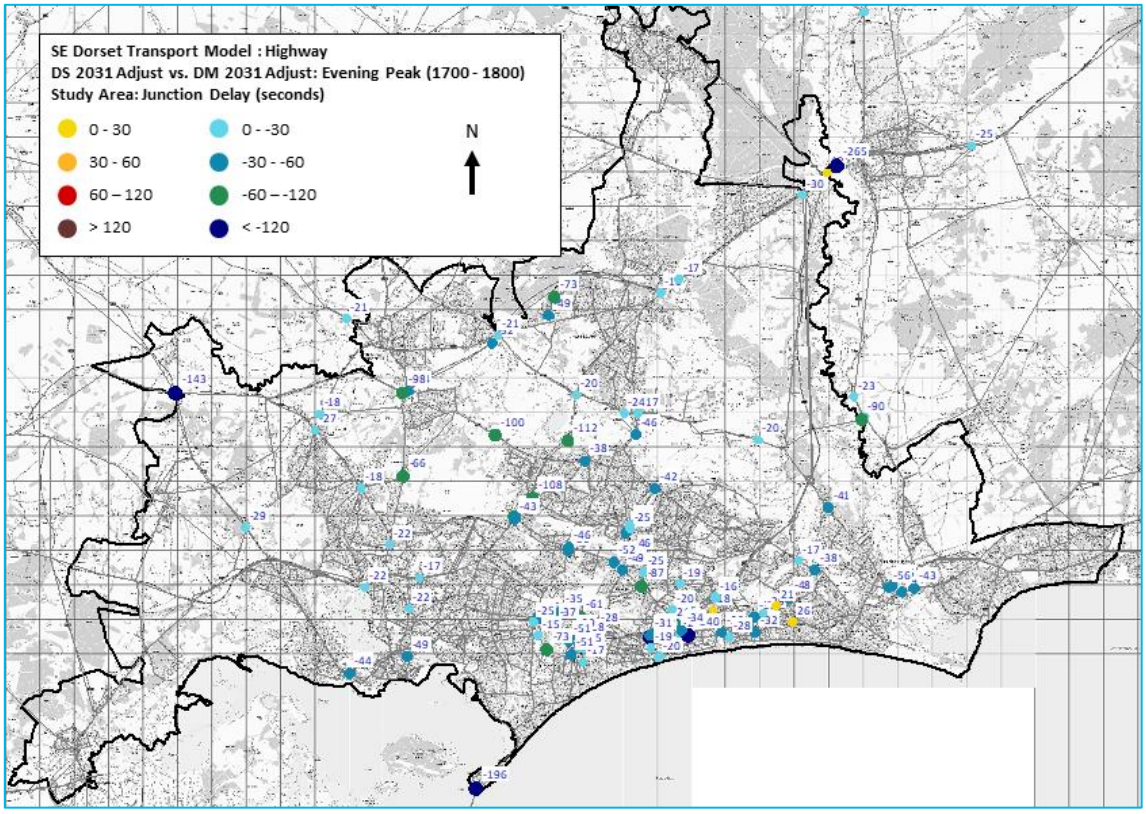


Figure 5.51: Node Delay (seconds) – 2031 Do-S vs Do-M, Afternoon Peak

When translated into journey times changes along the 12 key routes, the all but one of the routes are predicted to experience a reduction in journey times. These reductions are relatively significant, in the region of 10% to 20% (Table 5.13). In the afternoon peak, the A338 northbound direction still has an

increase in journey time with the interventions in place, although this is negligible at approximately 1%. As with the other time period, this increase is due to the closure of parallel routes to private cars e.g. West Cliff Road and Bath Road near the Pier which is pushing more traffic along the A338. However, this is significantly lower than in the first assessment period (2023), which supports previous analysis suggesting that the interventions outlined in Table 5.6 go a long way towards mitigating the impact of the previous road closures.

Table 5.13: Journey Time Changes - 2031 Do-Minimum vs 2031 Do-Something: PM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:27:23	00:17:16	-37.0%
	Westbound	11.4	00:22:56	00:16:15	-29.1%
A31	**Eastbound**	28	00:27:17	00:23:34	-13.6%
	Westbound	27.9	00:35:28	00:25:35	-27.9%
A338	**Northbound**	17.5	00:15:24	00:15:32	0.9%
	Southbound	17.4	00:16:35	00:14:38	-11.8%
A341 / A3060	**Eastbound**	13.7	00:29:31	00:24:52	-15.8%
	Westbound	13.7	00:28:53	00:24:32	-15.1%
A347	**Northbound**	7.5	00:11:21	00:10:48	-4.9%
	Southbound	8.2	00:15:11	00:12:05	-20.4%
A348 / A3049	**Eastbound**	13.8	00:25:08	00:19:48	-21.3%
	Westbound	13.9	00:23:01	00:18:47	-18.4%
A349	**Northbound**	5.6	00:11:30	00:08:16	-28.2%
	Southbound	5.5	00:08:45	00:07:41	-12.1%
A35 E	**Eastbound**	11.7	00:23:16	00:20:57	-9.9%
	Westbound	11.7	00:26:51	00:21:47	-18.9%
A35 W	**Eastbound**	17.8	00:28:46	00:25:54	-10.0%
	Westbound	18.5	00:28:32	00:24:58	-12.5%
A350	**Northbound**	13.9	00:21:52	00:15:30	-29.1%
	Southbound	13.9	00:24:03	00:18:57	-21.2%
A351	**Eastbound**	7.2	00:07:13	00:07:01	-2.6%
	Westbound	7.2	00:06:26	00:06:15	-2.9%
B3073	**Eastbound**	15.2	00:24:38	00:21:20	-13.4%
	Westbound	15.1	00:20:42	00:19:17	-6.8%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

2039 Do Minimum vs Do Something: Morning Peak

In the 2039 morning peak period, the model outputs suggest that the inclusion of the interventions outlined in will collectively result in a Table 5.5 to Table 5.7 will collectively result in a very significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic around the study area with a high proportion of roads seeing a reduction in traffic due to the number of bus and rail-related interventions in this forecast year which has involved a shift of vehicles off the network and onto public transport (Figure 5.52). There is also still an obvious redistribution of trips due to the road closures which were added in 2023. When accounting for these redistributions and reduced vehicle use across the area, many of the key routes into and through central areas are forecast to experience reductions. For example, the A338 sees a decrease in traffic of 350 vehicles northbound and 800 southbound around Holdenhurst, with Bridge Street in Christchurch showing a reduction of around 300 to 400 vehicles in each direction.

The smaller quantity of vehicles present in many of the redistributions suggests that the interventions continue to increase the relative desirability of these modes relative to using cars (Figure 5.53 and Figure 5.54). Overall, there is predicted to be an increase in public transport use of approximately 265% across the whole area, which suggests that a significant number of people are swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the 2023 measures.

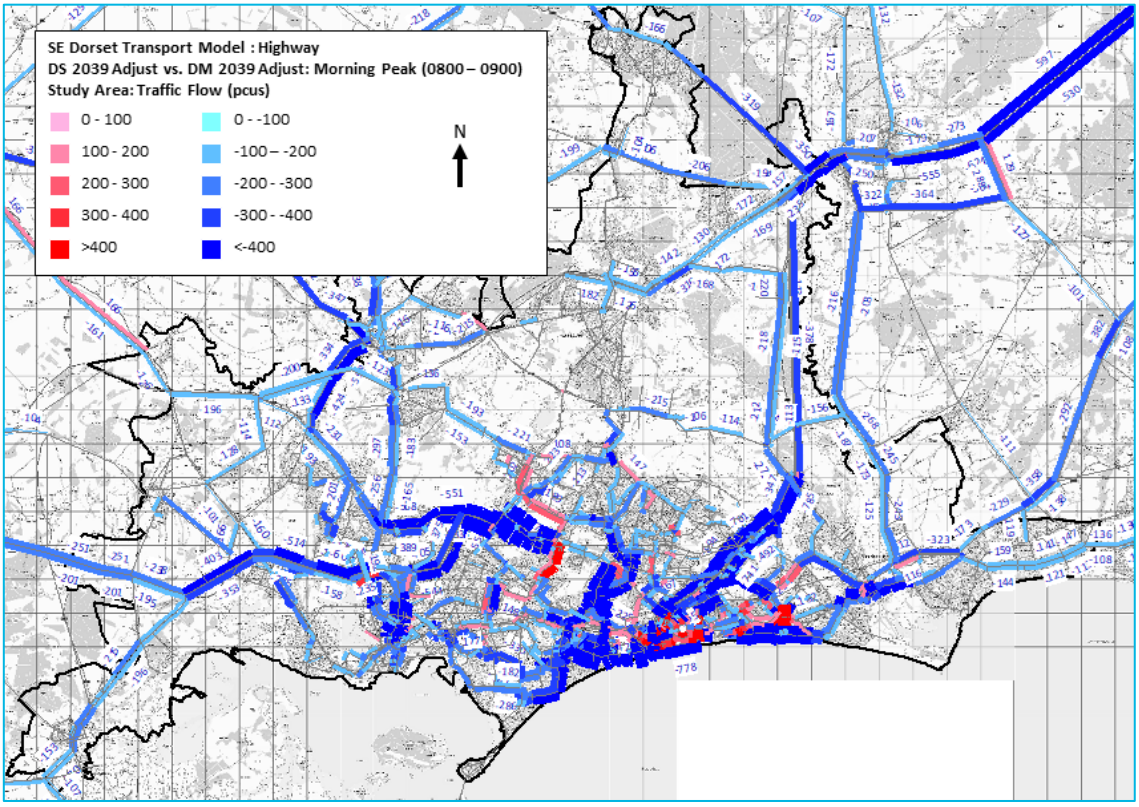


Figure 5.52: Highway Flows (actual) – 2039 Do-S vs Do-M, Morning Peak

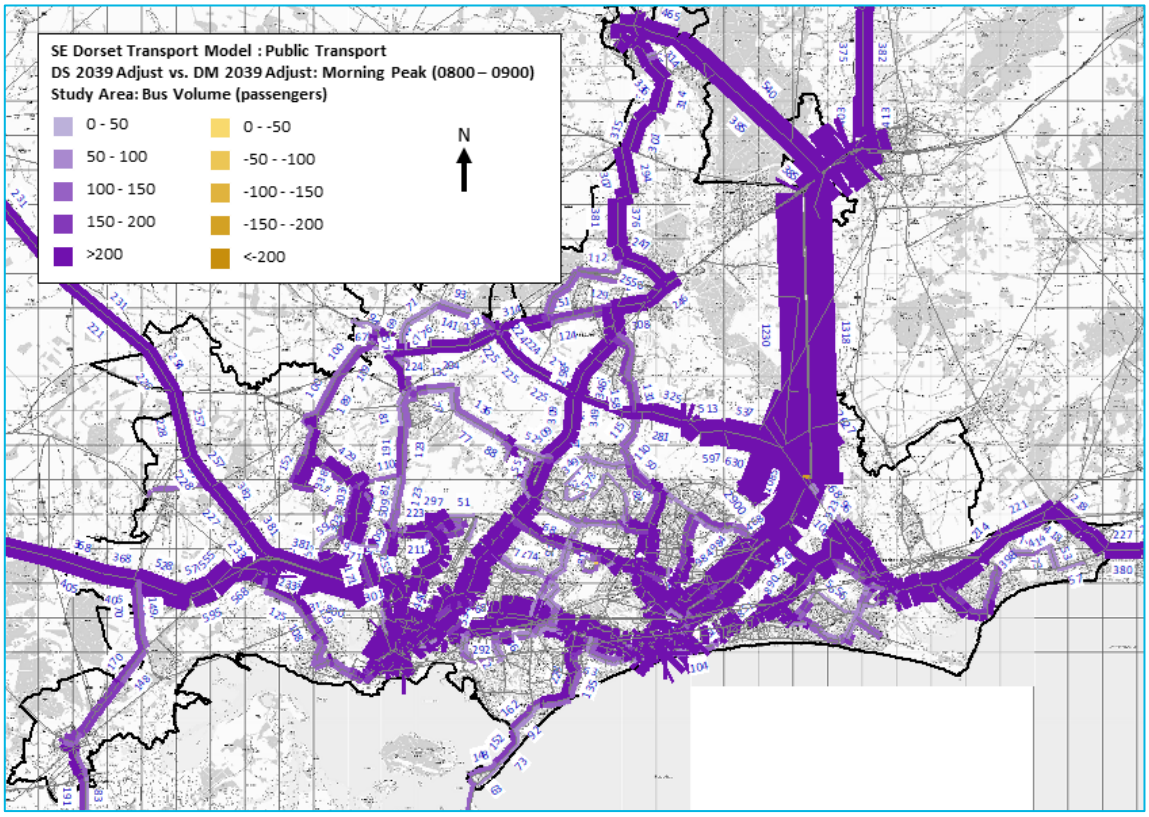


Figure 5.53: Bus Flows (passengers) - 2039 Do-S vs Do-M, Morning Peak

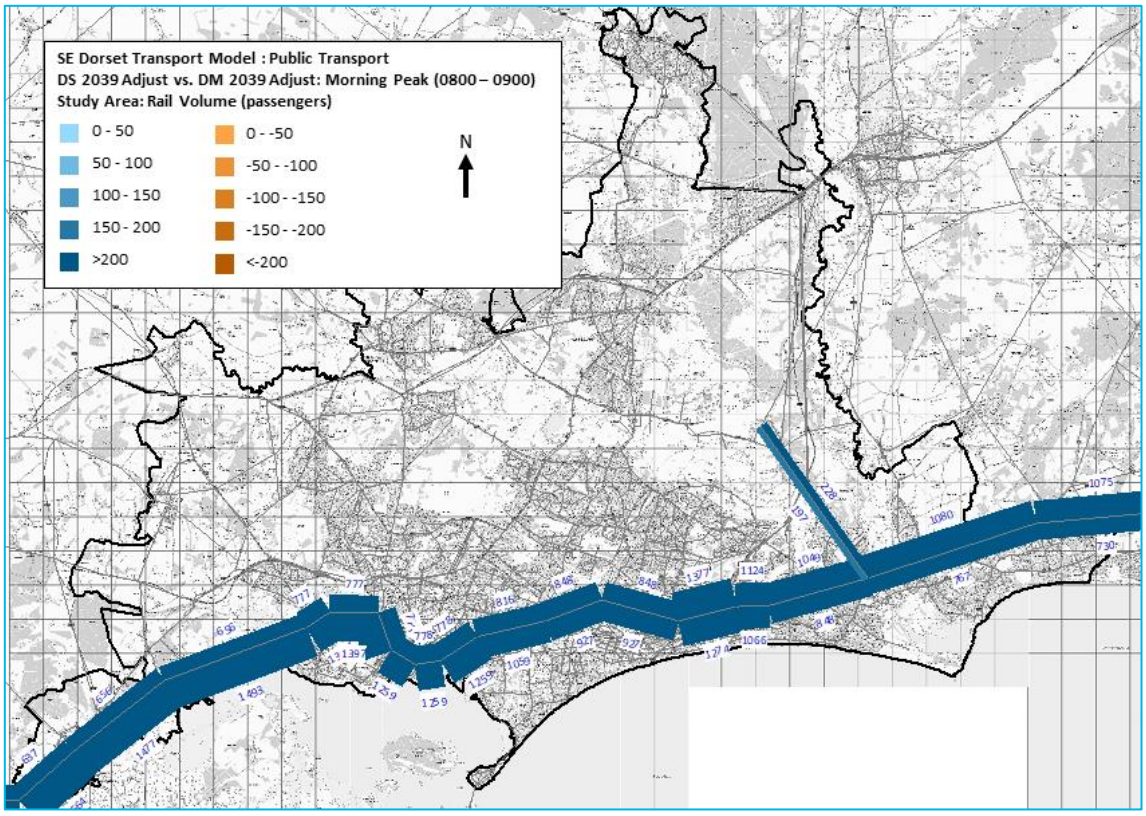


Figure 5.54: Rail Flows (passengers) - 2039 Do-S vs Do-M, Morning Peak

In terms of delays for those using the highway network, the 2039 model outputs suggest that there is a redistribution of delays across the area. However, the changes in delay are generally relatively minor (between 30 to 60 seconds), with an increasing number of delay changes being above 60 seconds relative to previous years. These larger changes of delay are generally along specific

corridors where interventions are introduced, such as Wallisdown Road or in Boscombe (Figure 5.49 and Figure 5.50).

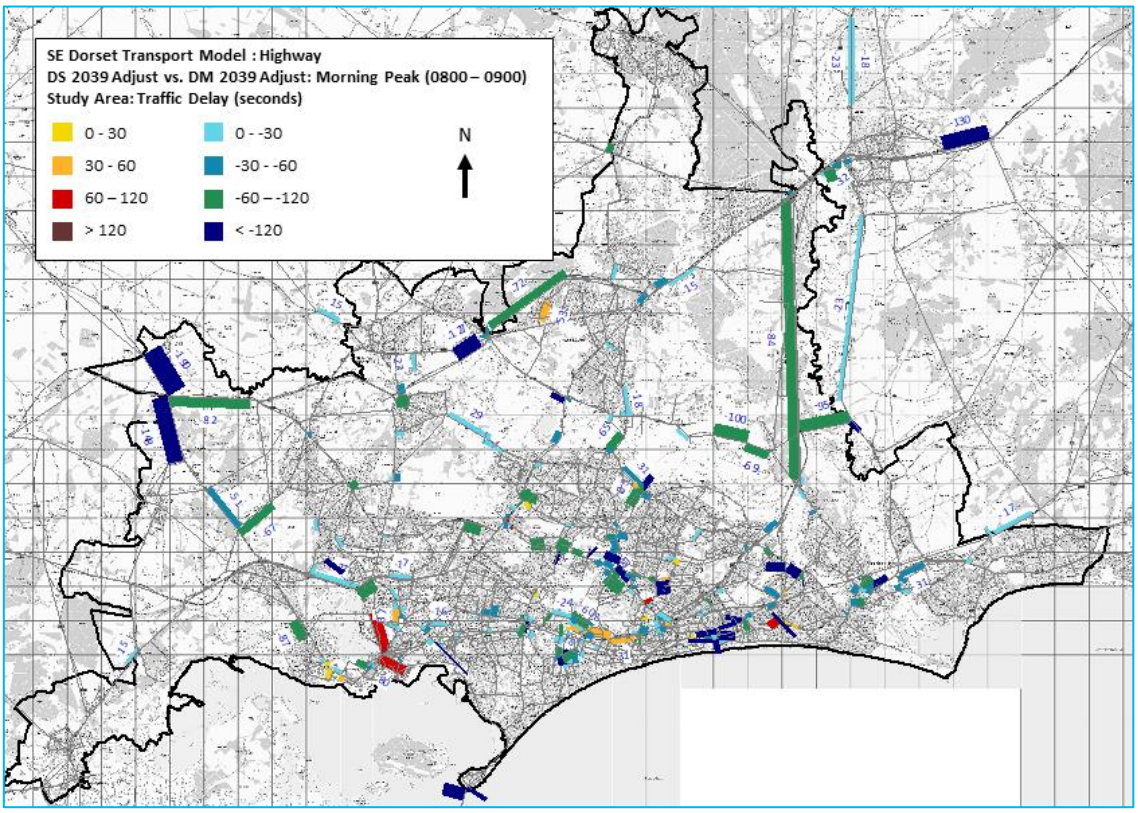


Figure 5.55: Link Delays (seconds) – 2039 Do-S vs Do-M, Morning Peak

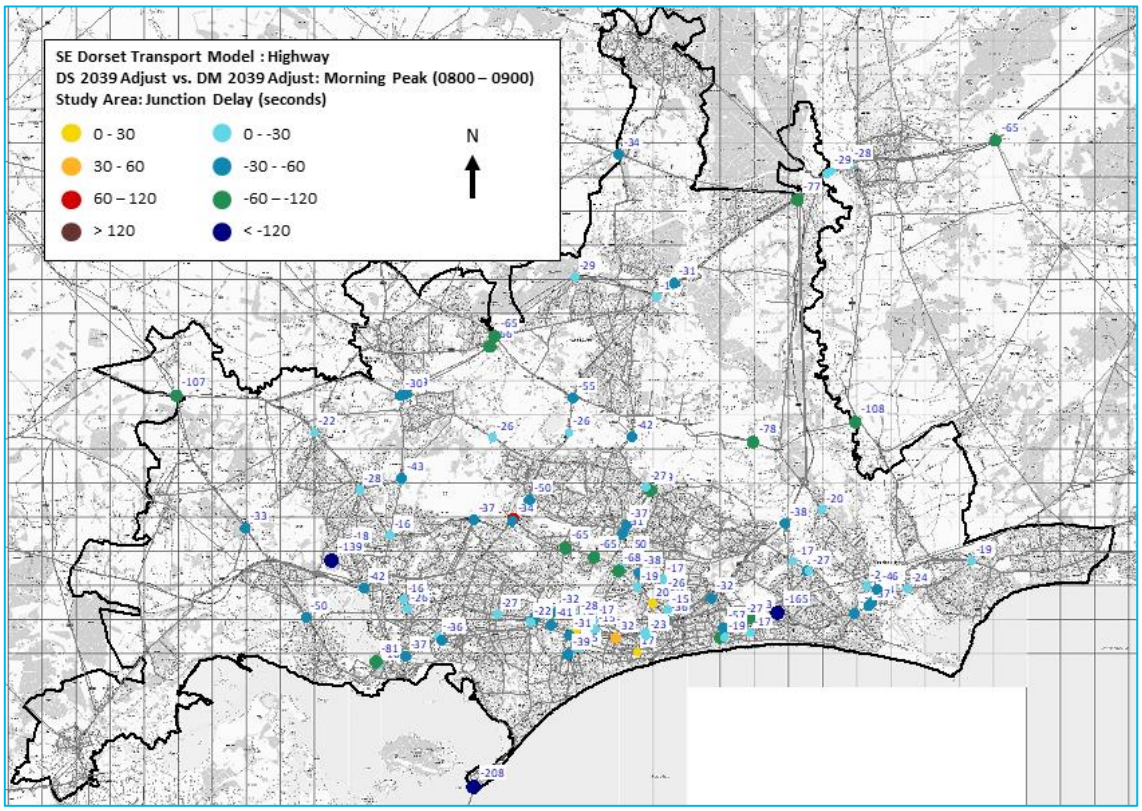


Figure 5.56: Node Delay (seconds) – 2039 Do-S vs Do-M, Morning Peak

When translated into journey times changes along the 12 key routes, all the routes are predicted to experience a reduction in journey times. These reductions are generally large, in the region of between 15% to 30%. The A338 northbound is no longer forecast to experience an increase in journey time with the interventions in place, which suggests that the complementary measures introduced throughout the period up to 2039 fully mitigates the impact of the road closures during the morning peak period.

Table 5.14: Journey Time Changes - 2039 Do-Minimum vs 2039 Do-Something: AM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:23:00	00:19:19	-16.0%
	Westbound	11.4	00:23:38	00:15:28	-34.6%
A31	**Eastbound**	28	00:34:29	00:26:46	-22.4%
	Westbound	27.9	00:27:47	00:23:07	-16.8%
A338	**Northbound**	17.5	00:14:06	00:14:26	2.3%
	Southbound	17.4	00:17:10	00:17:00	-0.9%
A341 / A3060	**Eastbound**	13.7	00:30:16	00:25:01	-17.4%
	Westbound	13.7	00:31:20	00:26:10	-16.5%
A347	**Northbound**	7.5	00:15:03	00:11:25	-24.2%
	Southbound	8.2	00:15:41	00:12:11	-22.3%
A348 / A3049	**Eastbound**	13.8	00:24:04	00:20:18	-15.6%
	Westbound	13.9	00:23:40	00:20:15	-14.4%

A349	**Northbound**	5.6	00:08:52	00:07:57	-10.2%
	Southbound	5.5	00:10:33	00:07:58	-24.5%
A35 E	**Eastbound**	11.7	00:26:57	00:20:37	-23.5%
	Westbound	11.7	00:29:14	00:23:52	-18.4%
A35 W	**Eastbound**	17.8	00:29:27	00:25:06	-14.8%
	Westbound	18.5	00:29:28	00:25:57	-12.0%
A350	**Northbound**	13.9	00:19:25	00:14:51	-23.5%
	Southbound	13.9	00:25:30	00:20:45	-18.7%
A351	**Eastbound**	7.2	00:07:26	00:07:06	-4.5%
	Westbound	7.2	00:06:37	00:06:23	-3.6%
B3073	**Eastbound**	15.2	00:23:23	00:20:54	-10.6%
	Westbound	15.1	00:24:15	00:20:59	-13.5%
**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*					

2039 Do Minimum vs Do Something: Inter-peak

In the 2039 inter-peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 to Table 5.7 will collectively result in a very significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic across the area with a high proportion of roads seeing a reduction in traffic due to the number of bus and rail-related interventions in this forecast year which has involved a shift of vehicles off the network and onto public transport (Figure 5.57). There is also still an obvious redistribution of trips due to the road closures which were added in 2023. When accounting for these redistributions and reduced vehicle use across the area, many of the key routes into and through central areas are forecast to experience reductions. For example, the A338 sees a decrease in traffic of 550 vehicles northbound and 600 southbound around Holdenhurst, with Bridge Street in Christchurch showing a reduction of around 200 to 300 vehicles in each direction.

The smaller quantity of vehicles present in many of the redistributions suggests that the interventions continue to increase the relative desirability of these modes relative to using cars (Figure 5.58 and Figure 5.59). Overall, there is predicted to be an increase in public transport use of approximately 360% across the whole area, which suggests that a significant number of people are swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the 2023 measures.

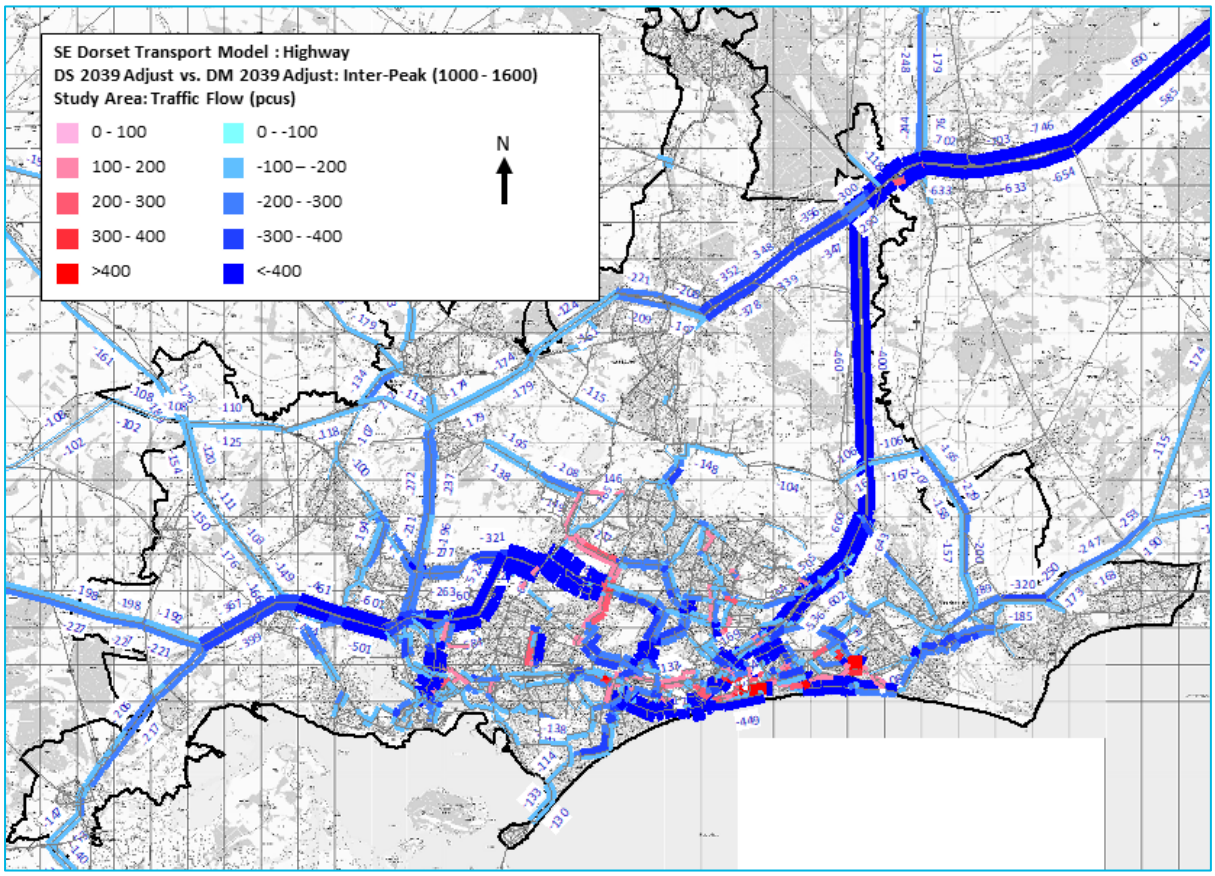


Figure 5.57: Highway Flows (actual) – 2039 Do-S vs Do-M, Inter-peak

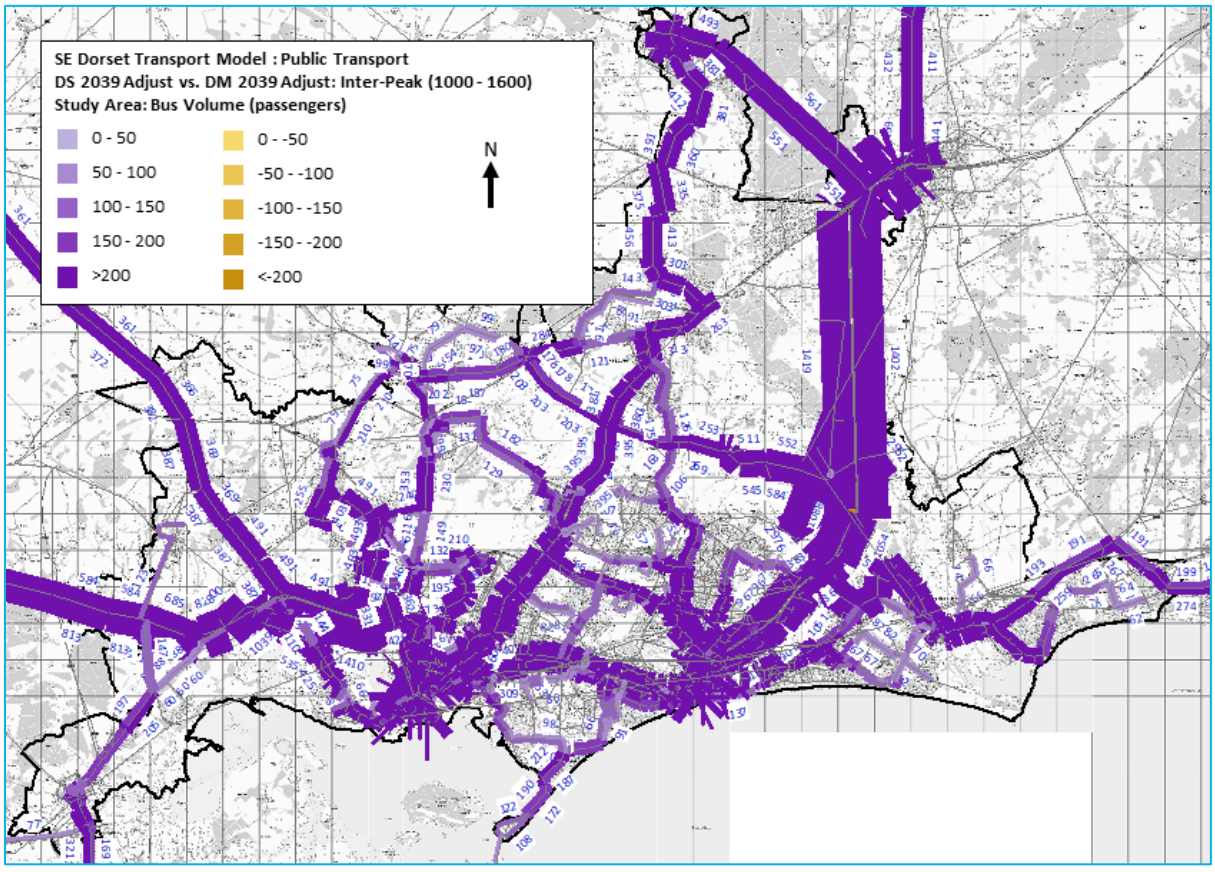


Figure 5.58: Bus Flows (passengers) - 2039 Do-S vs Do-M, Inter-peak

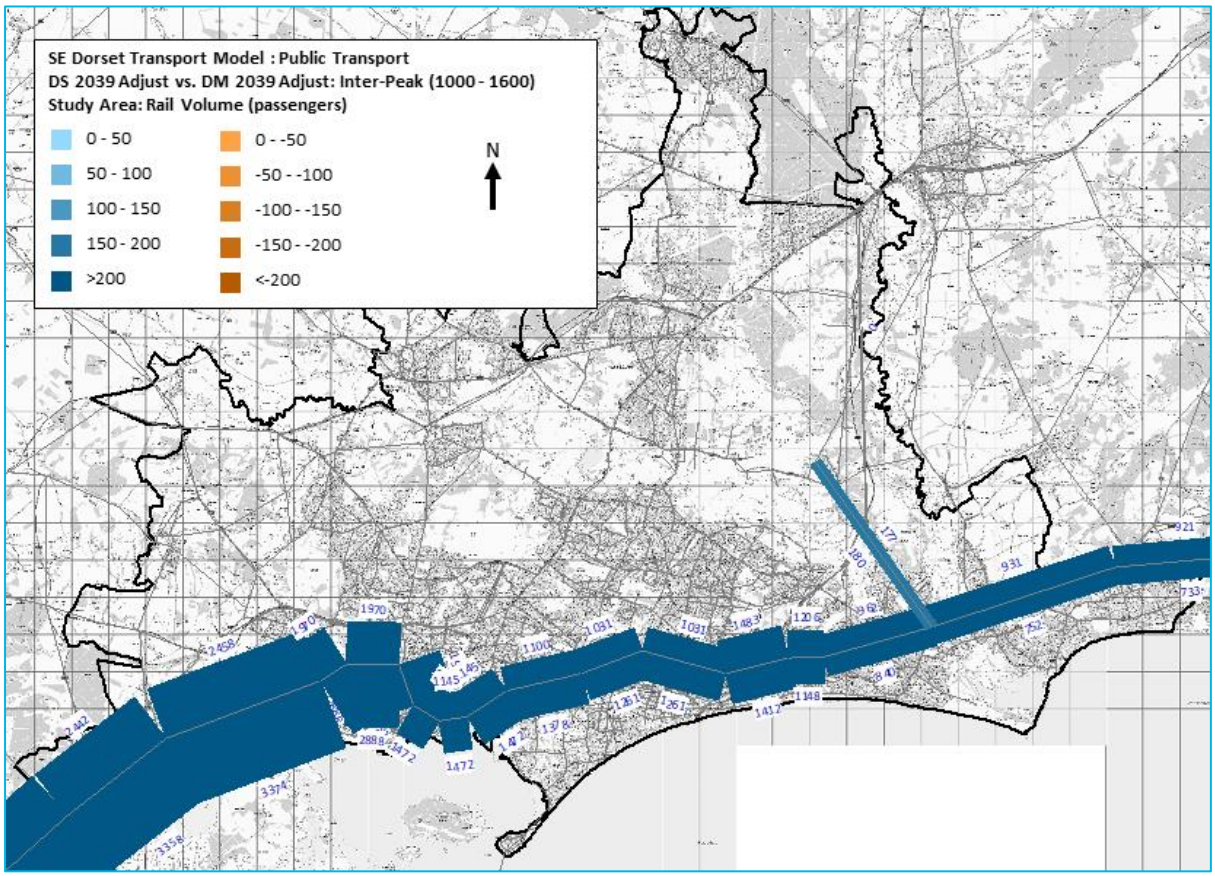


Figure 5.59: Rail Flows (passengers) - 2039 Do-S vs Do-M, Inter-peak

In terms of delays for those using the highway network, the 2039 model outputs suggest that there is a redistribution of delays across the area. However, the changes in delay are generally relatively minor (less than 30), with an increasing number of delay changes being above 30 seconds relative to previous years (Figure 5.60 and Figure 5.61).

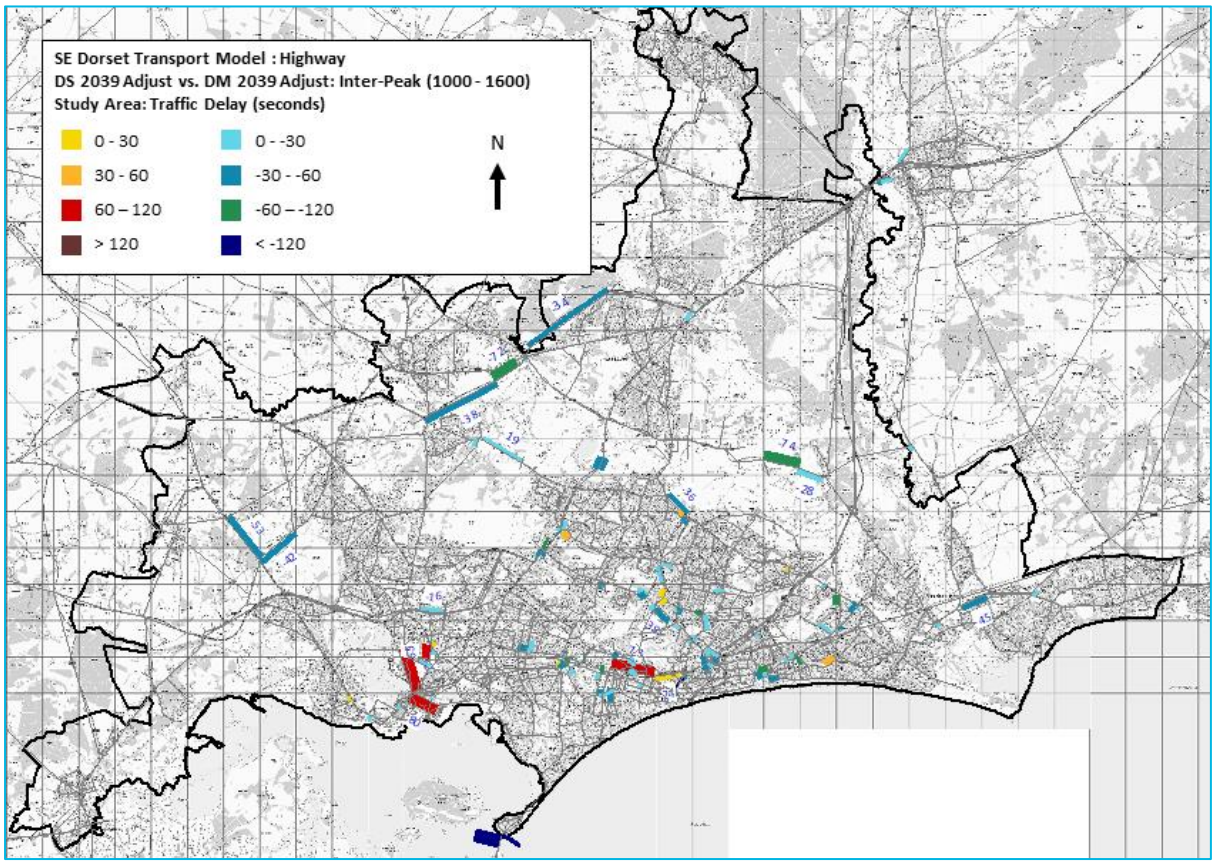


Figure 5.60: Link Delays (seconds) – 2039 Do-S vs Do-M, Inter-peak

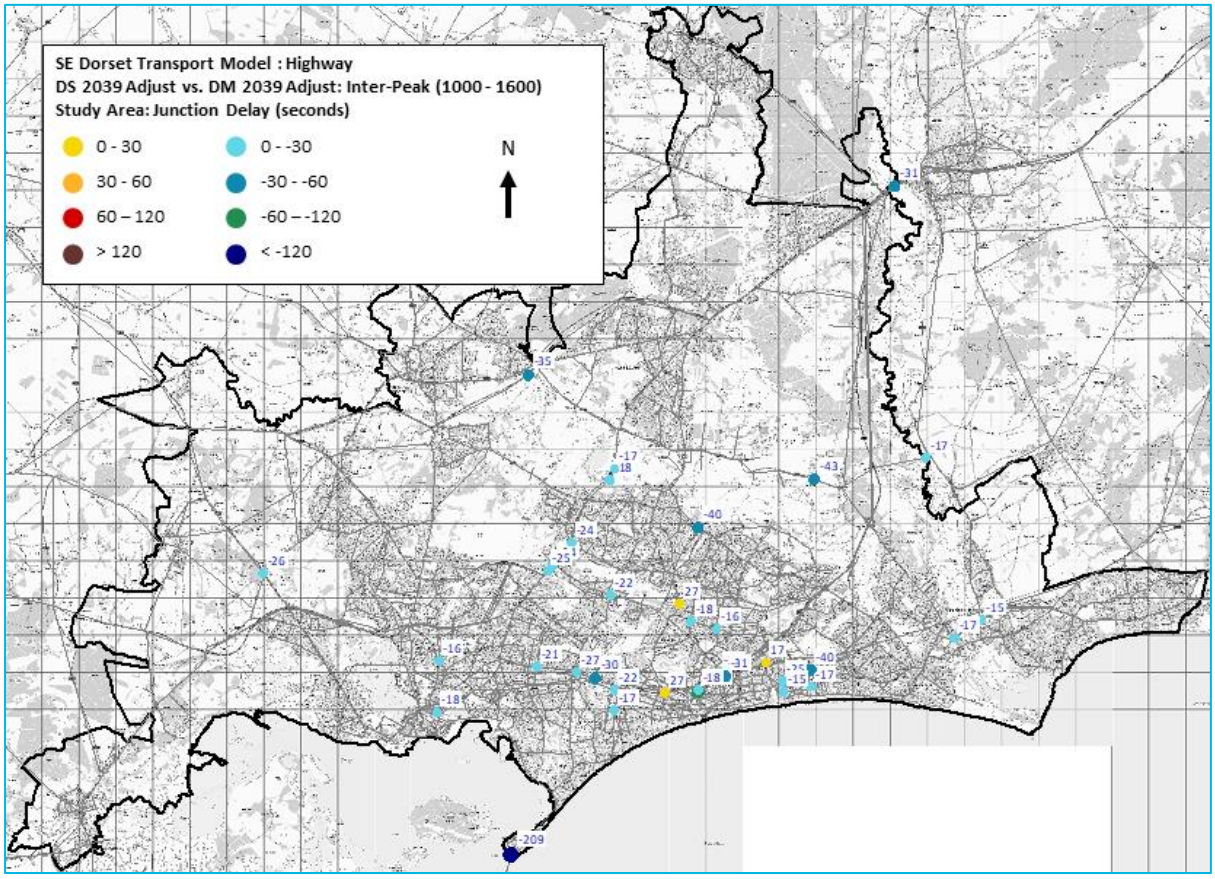


Figure 5.61: Node Delay (seconds) – 2039 Do-S vs Do-M, Inter-peak

When translated into journey times changes along the 12 key routes, all of the routes are predicted to experience a reduction in journey times. These reductions are generally in the region of between 5% to 15%. The A338 northbound is still longer forecast to experience an increase in journey time even with the interventions in place, which suggests that the complementary measures introduced throughout the period up to 2039 do not quite fully mitigate the impact of the road closures outside of the largest peak periods.

Table 5.15: Journey Time Changes - 2039 Do-Minimum vs 2039 Do-Something: Interpeak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:19:24	00:15:44	-18.9%
	Westbound	11.4	00:18:13	00:14:46	-18.9%
A31	**Eastbound**	28	00:26:09	00:23:09	-11.5%
	Westbound	27.9	00:24:37	00:21:59	-10.7%
A338	**Northbound**	17.5	00:11:02	00:12:08	10.0%
	Southbound	17.4	00:15:42	00:15:10	-3.4%
A341 / A3060	**Eastbound**	13.7	00:25:15	00:23:45	-5.9%
	Westbound	13.7	00:25:32	00:23:44	-7.0%
A347	**Northbound**	7.5	00:11:38	00:10:34	-9.2%
	Southbound	8.2	00:12:28	00:11:35	-7.1%
A348 / A3049	**Eastbound**	13.8	00:20:13	00:18:04	-10.6%
	Westbound	13.9	00:19:21	00:17:46	-8.2%
A349	**Northbound**	5.6	00:08:15	00:07:43	-6.5%
	Southbound	5.5	00:07:48	00:07:23	-5.3%
A35 E	**Eastbound**	11.7	00:20:02	00:18:56	-5.5%
	Westbound	11.7	00:23:30	00:20:47	-11.6%
A35 W	**Eastbound**	17.8	00:26:48	00:24:41	-7.9%
	Westbound	18.5	00:25:20	00:23:59	-5.3%
A350	**Northbound**	13.9	00:14:53	00:14:28	-2.8%
	Southbound	13.9	00:17:24	00:16:12	-6.9%
A351	**Eastbound**	7.2	00:07:12	00:07:02	-2.3%
	Westbound	7.2	00:06:24	00:06:16	-2.1%
B3073	**Eastbound**	15.2	00:23:16	00:21:48	-6.3%
	Westbound	15.1	00:21:02	00:19:32	-7.1%

**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*

2039 Do Minimum vs Do Something: Afternoon Peak

In the 2039 afternoon peak period, the model outputs suggest that the inclusion of the interventions outlined in Table 5.5 to Table 5.7 will collectively result in a very significant magnitude of change to the area's transport networks.

The outputs show some significant changes to traffic across the area with a high proportion of roads seeing a reduction in traffic due to the number of bus and rail-related interventions in this forecast year which has involved a shift of vehicles off the network and onto public transport (Figure 5.62). There is also still an obvious redistribution of trips due to the road closures which were added in 2023. When accounting for these redistributions and reduced vehicle use across the area, many of the key routes into and through central areas are forecast to experience reductions. For example, the A338 sees a decrease in traffic of 600 vehicles northbound and 700 southbound around Holdenhurst, with Bridge Street in Christchurch showing a reduction of around 300 to 400 vehicles in each direction.

The smaller quantity of vehicles present in many of the redistributions suggests that the interventions continue to increase the relative desirability of these modes relative to using cars (Figure 5.63 and Figure 5.64). Overall, there is predicted to be an increase in public transport use of approximately 280% across the whole area, which suggests that a significant number of people are swapping cars for public transport. In addition, the modelled mode shift during this time period also serves to reduce potentially negative traffic impacts that could be associated with the 2023 measures.

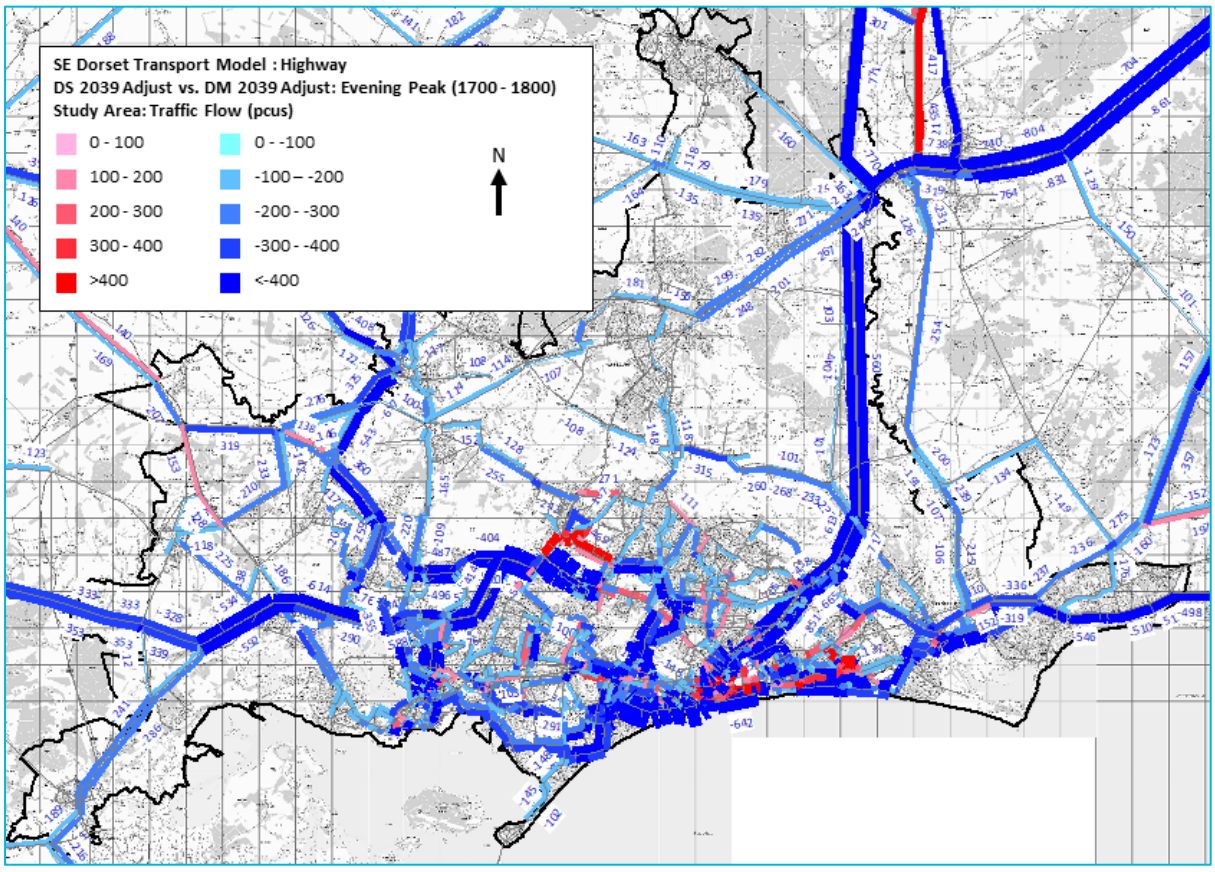


Figure 5.62: Highway Flows (actual) – 2039 Do-S vs Do-M, Afternoon Peak

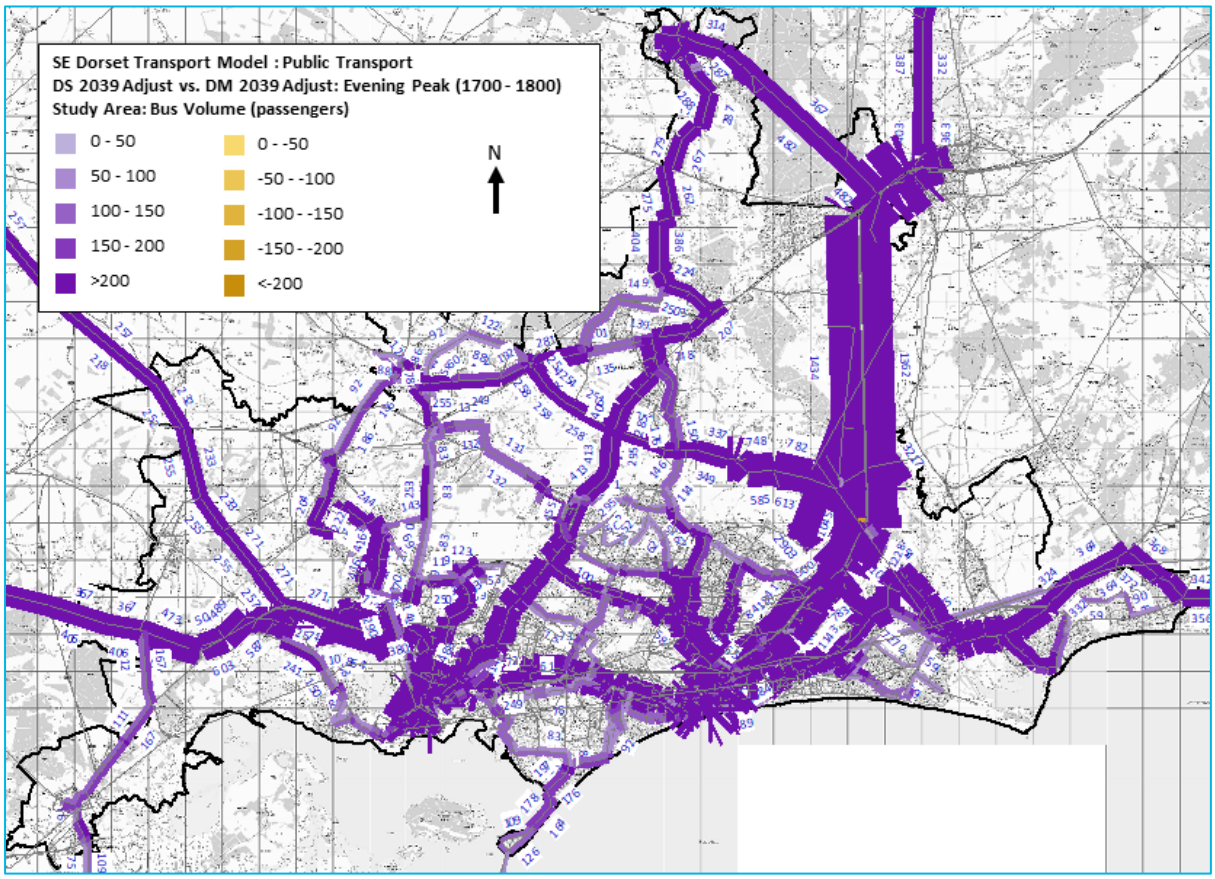


Figure 5.63: Bus Flows (passengers) - 2039 Do-S vs Do-M, Afternoon Peak

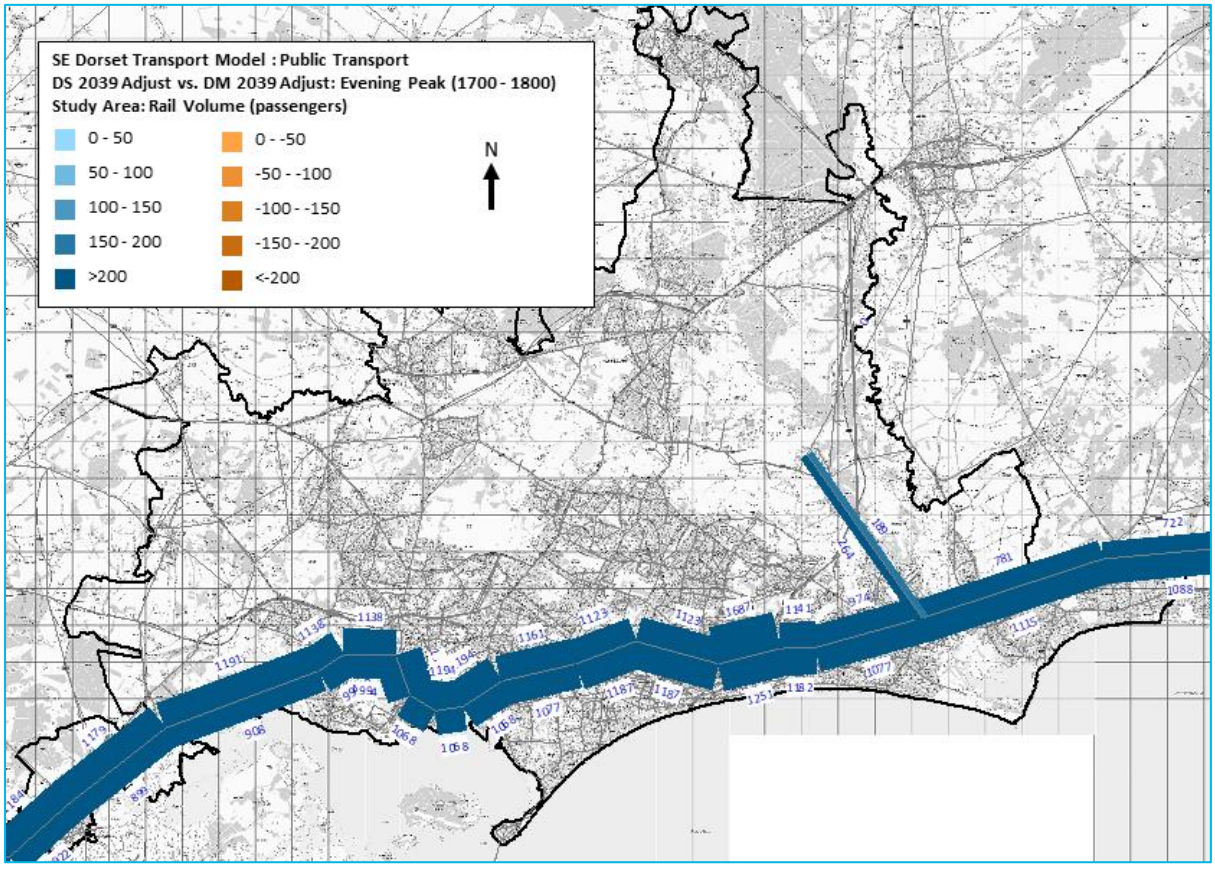


Figure 5.64: Rail Flows (passengers) - 2039 Do-S vs Do-M, Afternoon Peak

In terms of delays for those using the highway network, the 2039 model outputs suggest that there is a redistribution of delays across the area. However, the changes in delay are generally relatively minor (between 30 to 60 seconds), with an increasing number of delay changes being above 60 seconds relative to previous years. These larger changes of delay are generally along specific corridors where interventions are introduced, such as Wallisdown Road, Branksome or Boscombe (Figure 5.65 and Figure 5.66). The predictions also suggest that the improved bus links to the airport could reduce delays by up to 70 seconds.

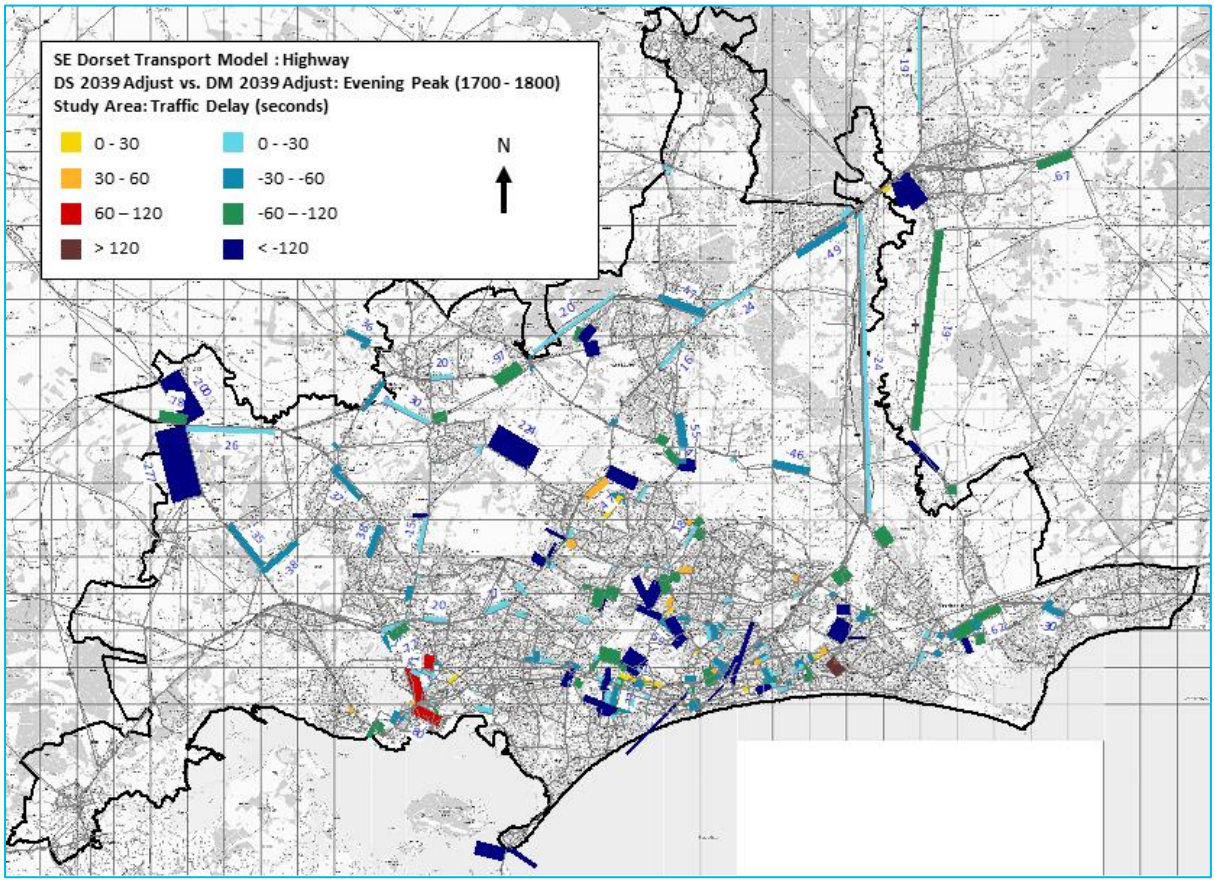


Figure 5.65: Link Delays (seconds) – 2039 Do-S vs Do-M, Afternoon Peak

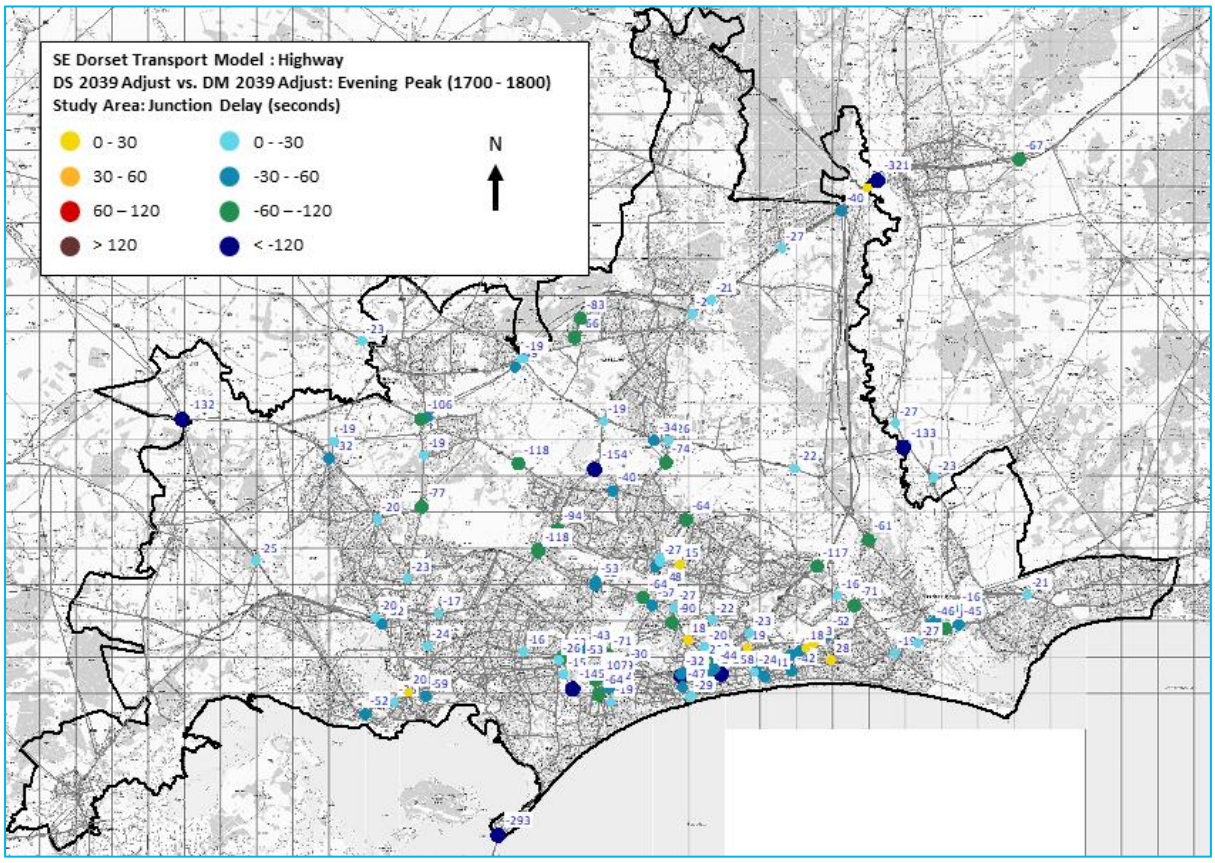


Figure 5.66: Node Delay (seconds) – 2039 Do-S vs Do-M, Afternoon Peak

When translated into journey times changes along the 12 key routes, all of the routes are predicted to experience a reduction in journey times. These reductions are generally large, in the region of between 15% to 30%. The A338 northbound is no longer forecast to experience an increase in journey time with the interventions in place, which suggests that the complementary measures introduced throughout the period up to 2039 fully mitigates the impact of the road closures in the afternoon peak period.

Table 5.16: Journey Time Changes - 2039 Do-Minimum vs 2039 Do-Something: PM Peak

Corridor	Direction	*Distance of route (km)	Modelled Journey Time – DM (hh:mm:ss)	Modelled Journey Time – DS (hh:mm:ss)	Journey Time change (%) from DM to DS
A3049 / A347	**Eastbound**	11.4	00:29:52	00:17:26	-41.6%
	Westbound	11.4	00:23:47	00:16:37	-30.1%
A31	**Eastbound**	28	00:29:25	00:23:51	-18.9%
	Westbound	27.9	00:38:36	00:26:23	-31.7%
A338	**Northbound**	17.5	00:16:20	00:16:17	-0.3%
	Southbound	17.4	00:18:28	00:14:46	-20.0%
A341 / A3060	**Eastbound**	13.7	00:31:11	00:25:21	-18.7%
	Westbound	13.7	00:29:29	00:24:49	-15.8%
A347	**Northbound**	7.5	00:11:35	00:10:51	-6.3%
	Southbound	8.2	00:17:14	00:12:19	-28.5%
A348 / A3049	**Eastbound**	13.8	00:26:55	00:20:32	-23.7%

	Westbound	13.9	00:24:13	00:19:13	-20.7%
A349	**Northbound**	5.6	00:12:09	00:08:29	-30.2%
	Southbound	5.5	00:09:02	00:07:46	-13.9%
A35 E	**Eastbound**	11.7	00:24:08	00:21:21	-11.5%
	Westbound	11.7	00:30:19	00:22:07	-27.1%
A35 W	**Eastbound**	17.8	00:29:59	00:26:15	-12.5%
	Westbound	18.5	00:29:28	00:25:15	-14.3%
A350	**Northbound**	13.9	00:22:25	00:16:07	-28.1%
	Southbound	13.9	00:24:42	00:20:25	-17.3%
A351	**Eastbound**	7.2	00:07:22	00:07:04	-4.1%
	Westbound	7.2	00:06:28	00:06:16	-3.1%
B3073	**Eastbound**	15.2	00:25:35	00:21:50	-14.7%
	Westbound	15.1	00:21:06	00:19:24	-8.1%
**There may be minimal differences in distance in each direction due to bends in the road/movements through junctions.*					

5.4 Do Something Intervention Analysis

In addition to the with and without strategy analysis undertaken in Section 5.3, the three Do Something model outputs have been reviewed to provide an additional overview of how the iterative packages interact over time. Detailed comparisons, also accounting for the potential implications of the background demand growth presented between the different without scheme years (Section 5.2), will be utilised alongside the economic appraisal results (Section 5.5) to help shape any recommendations within the Implementation Plan (Section 7).

Table 5.17 presents a high-level comparison of the 2031 Do-Something output results against the 2023 Do-Something output results for all peak periods.

Table 5.17: Model Output Details: 2023 Do Something vs 2031 Do Something, All peaks

Scenario and Year	**2023 Do Something vs 2031 Do Something**
Time Period	**All peaks**
Model Output Metrics	
Traffic Flows (Passenger Car Units - pcus)	In general, 2031 has some lower highway flows compared with 2023 even though the background growth of traffic is greater in 2031 compared with 2023. These lower flows can be attributed to the addition of bus-related interventions in 2031 which promotes more of a shift from highway to public transport.
Link Delays (Seconds)	Across all peaks, the delays are lower in 2031 compared with 2023 due to lower flows which can largely be attributed to the bus interventions. The pattern of where the delays occur is similar across the network which would suggest there is no large amounts of traffic rerouting which would suggest the modal shift is having a larger impact on the network than highway interventions.
Link Volume Capacity Ratio (%) (V/C)	Across the network, the Volume Capacity Ratios have reduced in 2031 compared with 2023 which is due to the modal shift from highway to bus, reducing vehicles on roads across the study area. As explained above, the pattern of where the delays occur is similar across the

	network which would suggest there is no large amounts of traffic rerouting.
Node Delay (Seconds)	In general, there are less delays in 2031 than in 2023 which is down to less traffic on the network in 2031 which, in turn, reduces congestion at junctions.
Bus Flows (Passengers)	In 2031 there is a much higher bus patronage than in 2023 which is expected due to the addition of bus-related interventions in 2031. In both years, there is an obvious corridor of bus usage along the corridors and within the centre of Bournemouth, Poole and Christchurch.
Rail Flows (Passengers)	Across all peaks, rail patronage has changed slightly from 2023 to 2031. In 2031, patronage from Bournemouth to the west has increased in both directions in all peaks. From Bournemouth to the east, the change is slightly lower which can be attributed to natural growth of rail patronage between the two years.
Statistics (Highway Model)	
Transient queues (pcu hrs)	Comparing 2031 to 2023, there is general decrease in queues and travel time which is due to lower traffic levels than 2023 as explained above. Because of this, average speeds across the network are higher in 2031 than 2023.
Over-capacity queues (pcu hrs)	
Link cruise time (pcu hrs)	
Total Travel Time (pcu hours)	
Total travel Distance (pcu kms)	
Overall average speed (kph)	
Statistics (Public Transport Model)	
Total PT passengers	There is a higher number of public transport trips in 2031 compared with 2023 for all peaks. This is due to the bus interventions outlined for 2031 which encourage a shift from cars to public transport. This, in turn, increases the total passenger kms across the network.
Total PT passenger kms	
Journey Times	
All routes	In summary, the journey time routes are generally quicker in 2031 than 2023, due to the lower traffic levels on the network which reduces congestion levels and therefore increases speeds across the network.

Table 5.18 presents a high-level comparison of the 2039 Do-Something output results against the 2031 Do-Something output results for all peak periods.

Table 5.18: Model Output Details: 2031 Do Something vs 2039 Do Something, All peaks

Scenario and Year	**2031 Do-Something vs 2039 Do-Something**
Time Period	**All peaks**
Model Output Metrics	
Traffic Flows (pcus)	In general, the difference between 2039 and 2031 differs across the network; however, the flows in 2039 are largely higher than 2031. The difference in interventions between 2031 and 2039 are the addition of some public transport interventions in 2039 (mainly rail) therefore there is less of an impact of the interventions on certain parts of the model

	and those which are not impacted are expected to have higher traffic flows due to background growth between 2031 and 2039. In some locations the flows are slightly lower in 2039 compared with 2031 but these will be along the rail lines.
Link Delays (Seconds)	Across all peaks, the delays are higher in 2039 compared with 2031 due to higher flows which can largely be attributed to the traffic growth between the two years. Within the urban areas, the magnitude of link delays are in similar locations e.g. Bournemouth West junction, Iford Bridge, Bournemouth Airport across both years.
Link Volume Capacity Ratio (%)	Across the network, the Volume Capacity Ratios have increased in 2039 compared with 2021 which is due to the background growth between 2031 and 2039, increasing the number of vehicles on roads across the study area. However, the increase is minimal within parts of the urban area which may be affected with vehicles switching to rail.
Node Delay (Seconds)	In general, there are more delays in 2039 than in 2031 which is down to more traffic on the network in 2039 which, in turn, increases congestion at junctions.
Bus Flows (Passengers)	In 2039 there is a small increase in bus patronage from 2031 corridors and within the centre of Bournemouth, Poole and Christchurch. This is expected due to the increased demand in 2039 compared with 2031.
Rail Flows (Passengers)	Across all peaks, rail patronage has increased quite significantly from 2031 to 2039 which is due to the interventions proposed for 2039 which involve rail improvements.
Statistics (Highway Model)	
Transient queues (pcu hrs)	Comparing 2039 to 2031, there is general increase in queues and travel time which is due to higher traffic levels in 2039 as explained above. Because of this, average speeds across the network are slightly lower in 2039 than 2031.
Over-capacity queues (pcu hrs)	
Link cruise time (pcu hrs)	
Total Travel Time (pcu hours)	
Total travel Distance (pcu kms)	
Overall average speed (kph)	
Statistics (Public Transport Model)	
Total PT passengers	There is a higher number of public transport trips in 2039 compared with 2031 for all peaks. This is due to the rail interventions outlined for 2039 which encourage more of a shift from cars to public transport. This, in turn, increases the total passenger kms across the network.
Total PT passenger kms	
Journey Times	
All routes	In summary, the journey time routes are generally slower in 2039 than 2031, due to the higher traffic levels on the network which increases congestion levels and therefore lowers speeds across the network.

5.5 High and Low Growth Scenarios

As outlined in TAG, the core scenario is intended to be the best basis for decision-making given evidence that is available. However, as there is often some uncertainty associated with the forecasting process, alternative scenarios are used to show what the impact of the schemes will be if

the growth is lower or higher than evidence suggests. These scenarios are calculated using TAG guidance, which is outlined in Unit M4, Section 4. For this, we have assessed a high and low growth scenario for each year for both in the Do Minimum and the Do Something.

Table 5.20 and Table 5.21 outline the changes in journey times between the core and the low and high growth scenarios respectively. The results show that there is a general decrease in journey times due to less demand in the lower scenarios, as would be expected. The A338 northbound (NB) sees a slightly higher impact on journey times in the low scenarios which suggest a release of queuing with the lower demand on this corridor. This is also shown on the A35 east corridor in a westbound direction which sees a decrease of 14% in the AM Peak.

Table 5.19: Low Growth vs Core: DS Scenarios, Journey Time Change

		Core vs Low								
CORRIDOR	DIR	2023			2031			2039		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
A3049 / A347	EB	-8%	-1%	-4%	-8%	-2%	-5%	-11%	-3%	-6%
	WB	-1%	-1%	-4%	-2%	-1%	-5%	-2%	-2%	-7%
A31	EB	-6%	-2%	-3%	-7%	-3%	-4%	-10%	-4%	-5%
	WB	-3%	-2%	-7%	-4%	-2%	-8%	-5%	-3%	-10%
A338	NB	-8%	-6%	-7%	-12%	-8%	-13%	-15%	-12%	-17%
	SB	-6%	-4%	-3%	-7%	-4%	-2%	-10%	-6%	-2%
A341 / A3060	EB	-4%	-1%	-4%	-3%	-1%	-3%	-4%	-2%	-4%
	WB	-4%	-1%	-3%	-3%	-2%	-2%	-5%	-2%	-3%
A347	NB	-5%	-1%	-1%	-3%	-1%	-1%	-6%	-2%	-2%
	SB	-4%	-1%	-3%	-2%	-1%	-2%	-3%	-1%	-4%
A348 / A3049	EB	-4%	-3%	-4%	-6%	-4%	-7%	-8%	-5%	-10%
	WB	-5%	-2%	-4%	-7%	-3%	-4%	-8%	-4%	-6%
A349	NB	-1%	-1%	-6%	-1%	-1%	-5%	-2%	-2%	-6%
	SB	-4%	-1%	-1%	-3%	-1%	-2%	-5%	-2%	-3%
A35 E	EB	-4%	-2%	-4%	-5%	-2%	-6%	-7%	-3%	-8%
	WB	-8%	-4%	-9%	-10%	-5%	-9%	-14%	-6%	-11%
A35 W	EB	-2%	-1%	-2%	-2%	-2%	-2%	-2%	-2%	-3%
	WB	-3%	-1%	-3%	-3%	-2%	-3%	-4%	-2%	-4%
A350	NB	-2%	-1%	-8%	-2%	-1%	-5%	-4%	-1%	-7%
	SB	-6%	-2%	-3%	-12%	-1%	-4%	-14%	-2%	-11%
A351	EB	0%	0%	0%	-1%	0%	-1%	-1%	-1%	-1%
	WB	-1%	-1%	0%	-1%	-1%	-1%	-1%	-1%	-1%
B3073	EB	-3%	-2%	-4%	-3%	-2%	-5%	-3%	-4%	-7%
	WB	-3%	-1%	-1%	-3%	-1%	-1%	-5%	-2%	-2%

Table 5.21 shows a comparison of the high and core scenarios. There is a general increase in journey times as expected with the increased demand on all corridors. There is a higher increase on corridors such as the A338 eastbound (EB), in the PM Peak of 26% in 2023 up to 41% in the 2039. The interpeak sees lower increases in journey times which is due to there being less congestion on the network.

Table 5.20: High Growth vs Core: DS Scenarios, Journey Time Change

		Core vs High								
CORRIDOR	DIR	2023			2031			2039		
		AM	IP	PM	AM	IP	PM	AM	IP	PM
A3049 / A347	EB	13%	2%	4%	14%	2%	5%	23%	4%	8%
	WB	3%	2%	13%	2%	2%	12%	6%	4%	16%
A31	EB	8%	2%	12%	11%	3%	9%	15%	6%	17%
	WB	6%	3%	11%	7%	4%	13%	11%	5%	18%
A338	NB	16%	7%	26%	17%	12%	31%	26%	13%	41%
	SB	12%	4%	6%	14%	7%	5%	17%	7%	11%
A341 / A3060	EB	9%	1%	9%	5%	2%	10%	12%	3%	16%
	WB	5%	2%	7%	7%	2%	5%	11%	4%	8%
A347	NB	12%	1%	1%	9%	2%	3%	20%	3%	5%
	SB	15%	1%	7%	7%	1%	6%	19%	2%	15%
A348 / A3049	EB	8%	3%	21%	9%	5%	22%	11%	6%	29%
	WB	8%	3%	6%	9%	4%	7%	13%	5%	10%
A349	NB	2%	1%	26%	2%	2%	16%	5%	2%	26%
	SB	14%	1%	5%	7%	1%	3%	14%	2%	4%
A35 E	EB	7%	3%	19%	11%	3%	21%	15%	6%	28%
	WB	15%	4%	14%	16%	7%	20%	20%	9%	24%
A35 W	EB	3%	2%	3%	3%	2%	3%	4%	3%	4%
	WB	6%	1%	5%	4%	2%	3%	7%	3%	5%
A350	NB	9%	1%	15%	5%	1%	13%	18%	2%	21%
	SB	13%	3%	8%	8%	2%	16%	11%	3%	12%
A351	EB	1%	0%	0%	1%	1%	1%	2%	1%	1%
	WB	1%	1%	1%	1%	1%	1%	2%	1%	1%
B3073	EB	7%	3%	13%	5%	5%	16%	11%	5%	21%
	WB	3%	1%	1%	6%	2%	1%	7%	3%	3%

More detailed results on the High and Low scenarios are shown in Appendix D, Section 2.4.

6. Economic Appraisal

6.1 Economic Assessment

Economic Appraisal Overview

As with the model output analysis, this section presents a summary of the results outlined in the full modelling report (Appendix D).

Outputs from the South East Dorset Multi-Modal Transport Model have been used to inform an economic appraisal for the packages of interventions that have been identified. As the models represent a limited number of hours in the day, calculations from previous studies in the area have been used replicate travel patterns throughout an entire year. The key elements that have been included within the economic appraisal for each package of measures are:

- Travel Time Benefits and Vehicle Operating Costs – The predicted change in benefits and costs for business, non-business and public transport users will be assessed using the DfT software 'TUBA'
- Accident Analysis – The predicted change in accidents associated with the package of measures will be assessed using the DfT software 'COBA-LT'
- Scheme costs – where available we will use scheme costs that have previously been prepared for identified schemes, elsewhere we will use ball-park scheme costs from similar projects or estimated scheme costs from professional judgement.

A comparison of the benefits against costs for the packages of measures will be used to define an indicative economic efficiency and a value for money rating.

Travel Time Benefits and Vehicle Operating Costs

Travel time benefits and the impact on vehicle operating costs for the proposed scheme have been assessed using TUBA over a standard appraisal period of 60 years as specified in the DfT guidance. 2017 has been adopted as the appraisal base year as this is the year that the first model represents.

Travel time benefits from the scheme are calculated by comparing the travel costs between the Do Minimum and Do Something model assignment results. The time saved is then monetised, with the value of time varying based upon the purpose of the trip (e.g. an employer's business trip has a greater value than a personal business trip). The value of time is expected to increase over time due to the increase in general wages and the growth in the economy.

The TUBA default economics input file, which provides parameters, definitions, growth rates and other factors that are consistent with the July 2020[8] TAG Data Book, has been adopted in this appraisal.

The vehicle operating costs are calculated in a similar way to the travel time benefits except that distance and time savings are used.

[8] July 2020 Update, including minor revisions

Collision Appraisal

Accident analysis has been undertaken using COBALT (Cost and Benefit to Accidents – Light Touch), a computer program developed by the DfT to analyse the impact of a scheme on accidents as part of economic appraisal for a road scheme.

The results of this are shown in Table 6.1.

Table 6.1: Accident Costs and Benefits (2010 Prices) – Core Model Scenario

	Do Minimum	Do Something
Accidents		
Total Accidents	16,731	12,956
Total Accidents Saved by Scheme		3,775
Casualties		
Total Casualties (Fatal)	214	166
(Serious)	2,546	1,970
(Slight)	19,733	15,289
Total Casualties Saved by Scheme (Fatal)		47
(Serious)		576
(Slight)		4,444
Economics		
Total Accident Costs (£000's)	801,973	624,433
Total Accident Benefits Saved by Scheme(£000's)		177,540

Overall, the strategy is forecast to provide significant accident benefits. The total number of casualties are forecast to reduce by approximately 30%. These benefits can be attributed to the predicted reduction in number of vehicles using the highway network when the strategy is implemented. When monetised using the latest central Government accident cost values, the overall benefit would be expected to be slightly over £175 million, in 2010 prices.

Scheme Costs and Profile

Scheme costs have been derived from existing business cases where possible. For schemes where this has not been possible, similar schemes in other cities have been used before a professional judgement has been made. Using this methodology, estimated scheme costs across all schemes totalled £849,718,730 in 2010 market prices.

To account for uncertainty surrounding how scheme costs are calculated, the cost estimate detailed above include risk costs and optimism bias as detailed by scheme and stage in Table 6.2. These levels of optimism bias are in accordance with those outlined in DfT guidance.

Table 6.2: Risk and Optimism Bias

Category	Stage 1	Stage 2	Stage 3
Roads	44%	15%	3%
Light Rail	66%	40%	6%
Conventional Rail	64%	18%	4%
Fixed Links	66%	23%	6%
Building Projects	51%	28%	4%
IT Projects	200%	105%	10%

The total costs detailed above were then profiled for input into the economic appraisal. Each scheme was categorised into a five-year band and then the costs were evenly distributed over the five years (20% each year) and is detailed in Table 6.3. Without any detailed cost profiles, this represents the best assumption.

Table 6.3: Cost Profile

Scheme Length	2020-2024	2025-2029	2030-2034	2035-2039
5 Year Schemes	100%	-	-	-
10 Year Schemes	-	100%	-	-
15 Year Schemes	-	-	100%	-
20 Year Schemes	-	-	-	100%

User Classes

The modelled user classes, representing several different types of transport and trip purposes have been converted to the user classes required by the TUBA software. As the model makes a number of generalisations regarding vehicle types and trip purposes, particularly for larger vehicles or freight trips, conversion from the model to the TUBA software required the application of assumptions using DfT parameters.

Greenhouse Gases

The TUBA program includes an assessment of the change in greenhouse gases produced by implementing the scheme. The amount of greenhouse gases in each scenario is calculated using the trip information that has been extracted from the models.

The TUBA program has default values for carbon produced per litre of fuel. Carbon dioxide emissions have been extracted from the TUBA output file for every year during the appraisal period with the latest year being 2082.

The assessment considers the future fuel efficiency of vehicles, which is predicted to increase and the change in the valuation of carbon.

Travel Time Benefits and Vehicle Operating Costs

Table 6.4 shows the total Core scenario benefits over the 60-year appraisal period split into benefit type and split between trip purposes. This highlights that the majority of the benefits created by the strategy are travel time benefits for highway.

Table 6.4: Transport Benefits by Trip Purpose, Core Growth Scenario (£'000 2010 Prices)

	Purpose	Travel Time	PT Fares	VOC Fuel	VOC Non-fuel	Indirect Tax	Total
Highway	Business	£309,028	£-	£13,266	£12,076	-£18,778	£315,592
	Commuting	£364,461	£-	£8,597	£82,922	-£65,391	£390,589
	Other	£285,509	£-	£5,334	£128,335	-£99,257	£319,920
	Total	£958,998	£-	£27,196	£223,333	-£183,426	£1,026,101
Public Transport	Business	£19,311	£3,735	£-	£-	£-	£23,047
	Commuting	£150,338	£20,877	£-	£-	-£67,367	£103,847
	Other	£163,026	£109,376	£-	£-	-£98,529	£173,873
	Total	£332,675	£133,988	£-	£-	-£165,896	£300,767

Monetised Environmental Assessment Results

The TUBA calculated impact on greenhouse gases for the scheme present a predicted benefit of £76 million. This decrease in cost is predominately down to the mode shift from car to public transport.

Transport Economic Efficiency

The Transport Economic Efficiency (TEE) table provides a summary of the travel time and vehicle operating cost benefits. The benefits are summarised by trip purpose. This includes the benefits generated from the main TUBA assessment, maintenance and construction scenarios. The TEE table for the core growth scenario for the scheme is shown in Table 6.5. Low and high growth results can be found in Annex G of the full modelling report (Appendix D).

Table 6.5: Economic Efficiency of the Transport System Results, Core Growth Scenario (£'000 2010 Prices)

Non-business: Commuting	**£'000**
User benefits	
Travel time	£514,799
Vehicle operating costs	£91,519
User charges	£20,877
During Construction & Maintenance	£-
NET COMMUTING	£627,194
Non-business: Other	
User benefits	
Travel time	£448,535
Vehicle operating costs	£133,669
User charges	£109,376
During Construction & Maintenance	£-
NET OTHER	£691,580
Business	
User benefits	
Travel time	£328,339
Vehicle operating costs	£25,342
User charges	£3,735
During Construction & Maintenance	£-
Subtotal	
Private sector provider	
Revenue	£-
Operating costs	£1,089,559
Investment costs	£-
Grant/subsidy	£-

Subtotal	£-
Other business impacts	
Developer contributions	£-
NET BUSINESS	£1,446,976
Total	
Present Value of Transport Economic Efficiency Benefits (TEE)	£2,765,750

Public Accounts

The Public Accounts table details the source of the scheme costs and have been summarised by local and central government. The Public Accounts table for the core growth scenario is shown in Table 6.6.

Table 6.6: Public Accounts, Core Growth Scenario (£'000 2010 Prices)

Local Government Funding	
Revenue	£ -
Operating Costs	£ -
Investment Costs	£ -
Developer and Other Contributions	£ -
Grant/Subsidy Payments	£ -
Net Impact:	£ -
Central Government Funding: Transport	
Revenue	£ -
Operating costs	£ -
Investment Costs	£ 487,122
Developer and Other Contributions	£ -
Grant/Subsidy Payments	£ -
Net Impact:	£ 487,122
Central Government Funding: Non-Transport	
Indirect Tax Revenues	-£ 349,322
Totals	
Broad Transport Budget	£ 487,122
Wider Public Finances	-£ 349,322

Analysis of Monetised Costs and Benefits

The benefits from each individual assessment have been totalled to create the Present Value Benefits (PVB) of the scheme. They have been summarised in the Analysis of Monetised Costs and Benefits table along with the Present Value of Costs (PVC) and the initial unadjusted Benefit-Cost Ratio (BCR). The Analysis of Monetised Costs and Benefits (AMCB) table for the core growth scenario for the scheme is shown in Table 6.7. Low and high growth results can be found in the full modelling report (Appendix D, Annex G).

Table 6.7: Analysis of Monetised Costs and Benefits, Core Growth Scenario (£'000 2010 Prices)

Noise	£-
Local Air Quality	£-
Greenhouse Gases	£76,426
Journey Quality	£-
Physical Activity	£-
Accidents	£177,540
Economic Efficiency: Consumer Users (Commuting)	£627,194
Economic Efficiency: Consumer Users (Other)	£691,580
Economic Efficiency: Business Users and Providers	£1,446,976
Wider Public Finances	£349,322
Present Value of Benefits (PVB)	£2,670,394
Broad Transport Budget	£487,122
Present Value of Costs (PVC)	£487,122
Overall Impacts	
Net Present Value (NPV)	£2,183,272
Initial Unadjusted Benefit to Cost Ratio (BCR)	5.48

The results show that the scheme provides significant benefits to transport users, resulting from the significant improvement in the performance in the South East Dorset area provided by the scheme. The scheme produces an initial unadjusted BCR of **5.48,** which represents very high value-for-money[9].

High and Low Growth Scenarios

Annex I of the Modelling Report provides details of the economic appraisal that has been undertaken for the low and high growth scenarios. The strategy produces an initial unadjusted BCR of **4.15** for the low growth scenario and **8.33** for the high growth scenario, both of which represent very high value for money.

Conclusion

This report sets out the methodology used to appraise the Transport Strategy set out in this document for South East Dorset. The methodology complies with DfT guidance set out in TAG.

The economic appraisal has comprised the following key elements:

- Travel time benefits and vehicle operation costs using TUBA;
- Accident analysis using COBALT;
- Estimation of Costs; and
- Analysis of Monetised Costs and Benefits.

[9] DfT (2015) Value for Money Framework, Box 5.1

The assessment presented in this report shows that for the core scenario the scheme offers very high Value for Money with an initial unadjusted benefit to cost ratio of **5.48** for the core growth scenario.

The Value for Money Benefit has been determined based on the initial unadjusted BCR, using the information in the following table (DfT – Value for Money Framework).

Box 5.1 Standard Categories
(Transport cost outlays exceed revenues or cost savings)

VfM Category	Implied by…*
Very High	BCR greater than or equal to 4
High	BCR between 2 and 4
Medium	BCR between 1.5 and 2
Low	BCR between 1 and 1.5
Poor	BCR between 0 and 1
Very Poor	BCR less than or equal to 0

**Relevant indicative monetised and/or non-monetised impacts must also be considered and may result in a final value for money category different to that which is implied solely by the BCR. This chapter provides guidance on how to select the final value for money category.*

6.2 Wider Economic Impacts

Overview of Wider Economic Impacts

Wider economic impact appraisal quantifies the impact on the local, regional and national economy caused by changes in accessibility generated by the transport interventions in the strategy. Wider impacts (WIs) are not captured by the conventional transport user benefits appraisal undertaken in the DfT's TUBA software and reported in Section 6.1 of this report. WIs arise when there are market failures (caused by difficulties for businesses in accessing employees, suppliers and other professional services) that are addressed by the proposed transport interventions.

For WIs to contribute to a scheme business case it is necessary to demonstrate, through a scheme specific economic narrative, that the local socio-economic conditions coupled with specific local business market are leading to market failures which are directly addressed by the improvements to accessibility generated by the scheme. Such market failures may include difficulty in businesses attracting sufficiently experienced / qualified staff, or professional services, leading to reductions in productivity and difficulties in potential employment accessing jobs leading to under employment.

The nature of the South East Dorset Urban Mobility Strategy, and its focus on increasing urban mobility, will directly increase accessibility of business to other businesses and employees. In later stages of business case development there will be a requirement to demonstrate a specific link between current mobility issues and business growth constraints with reference to the specific measures and corridors in the strategy. However, assessment of the potential scale of wider economic impacts generated by the combined changes has been undertaken, following TAG methodologies, to provide an indication of the scale of potential impact associated with the strategy interventions.

There are two types of wider economic impact, specifically driven by increased mobility that have been assessed:

- Agglomeration impacts - this relates to the concentration of economic activity across an area. By improving the accessibility of an area to a greater number of firms and workers, transport schemes can deliver increases in Gross Domestic Product (GDP). The primary influences on determining agglomeration impacts are changes in travel costs, the number and location of workers, and the productivity of those workers.
- Labour market impacts from more/less people working – this is the impact of a transport scheme on labour supply and is based mainly on changes in commuting travel costs.

The wider economic impacts of the strategy has been assessed in the core growth scenario using the Department for Transport's WITA software in line with TAG guidance.

This assessment shows that the strategy provides approximately £520 million of wider economic benefits through increased productivity and output. The majority of the benefits (approximately £500 million) are realised through increased economies of agglomeration with the strategy improving accessibility between firms and their suppliers, markets and workers. The wider economic impact benefits equate to 15% of the conventional user benefits (TAG level 1 PVB).

The following sections describe the appraisal methodology and WI results in more detail.

Wider Economic Impact Appraisal Methodology

To assess the wider impacts of the strategy, the latest release of the DfT's Wider Impacts in Transport Appraisal (WITA 2.0) software was used.

WITA 2.0 implements the calculations of wider impacts as described in TAG Unit A2.1 'Wider Economic Impacts Appraisal'. In all cases the WITA methodology seeks only to capture the part of the above impacts that is not already captured in conventional transport user benefit calculations.

The data required for the calculation of wider economic impacts overlaps significantly with that required for the conventional appraisal of transport user benefits which has been undertaken for the strategy using the DfT program TUBA.

As part of the appraisal of the conventional user benefits the inputs to TUBA were checked to ensure the robustness of the results. Many of these inputs have been used as input to the WITA assessment. Additional economic parameters have been taken from the DfT Wider Impacts Dataset, Version 3.1.1 - DfT July 2020; and a Commuting Production-Attraction (PA) Matrix has been derived from 2011 census travel to work data.

Due to the nature of transport models, and the mathematical functions within them, changes in assigned traffic flows can occur in areas away from any schemes, as a consequence of other changes arising closer to where the scheme has an impact or where equilibrium has been reached at a slightly different point. These changes may not necessarily be a real reflection of an actual change that would occur. They do, however, affect the travel costs between scenarios upon which economic analysis is undertaken. The effects of the changes in flow and cost can be either positive, providing benefits, or negative.

To ensure the robustness of the economic appraisal results, benefits arising on unrealistic movements have been removed during the assessment of the conventional transport user benefits. This is a process called masking and has been applied to the WITA transport model input data to ensure consistency.

Wider Economic Impact Appraisal Results

6.2.1.1 Agglomeration Impacts

An agglomeration economy is a type of location-based effect in which individuals and firms derive productivity benefits from locating in close proximity to other individuals and firms. Agglomeration benefits arise from improved labour market interactions, knowledge spill-over and linkages between suppliers and consumers.

The strategy reduces travel times and delay for car and public transport users across South East Dorset improving the connectivity and accessibility between suppliers and firms.

Table 6.8 shows the potential benefits arising from agglomeration by industrial sector, these benefits have been calculated using the DfT's WITA 2.0 software using outputs from the SEDMMTM.

Table 6.8 Benefits Arising from Agglomeration Impacts

Industrial Sector	Benefit (£,000s)				
	Bournemouth	Poole	Christchurch	East Dorset	Region Total
Manufacturing	£1,400	£3,900	£800	£1,900	**£8,000**
Construction	£8,500	£7,900	£2,900	£5,300	**£24,500**
Consumer Services	£47,800	£33,300	£12,800	£16,700	**£110,600**
Producer Services	£197,100	£106,700	£23,400	£30,300	**£357,500**
Total Agglomeration	**£254,900**	**£151,800**	**£39,800**	**£54,200**	**£500,700**

Note: *2010 prices, discounted to 2010*

Agglomeration benefits arise from improved labour market interactions, knowledge spill-over and linkages between suppliers and consumers. The Strategy reduces travel times and delay for travellers potentially improving the connectivity and accessibility between suppliers and firms.

Table 6.8 shows that there are positive potential agglomeration impacts realised across the strategy interventions providing around £500 million of benefits across the appraisal period. The greatest potential agglomeration benefits are expected in producer service sector in Bournemouth and Poole. This is because of the industrial profile of the region; weighted towards producer services industries that typically sell services primarily to the business community rather than to individuals and households, for example accounting firms, consultants, and design services; and that the urban centres of Poole and Bournemouth contain the largest concentrations of existing business employment in this sector.

6.2.1.2 Labour Market Impacts from More/Less People Working

Transport costs are likely to affect the overall costs and benefits to an individual from working. In deciding whether or not to work, an individual will weigh travel costs against the wage rate of the job travelled to. A change in transport costs is therefore likely to affect the incentives of individuals to work and hence the overall level of labour supplied in the economy.

As the strategy interventions reduce the cost of travel, through improved travel times and service availability, there is therefore potential for a higher level of labour to be supplied in the economy as a result of its implementation.

Table 6.9 shows the total potential benefit arising from labour supply impacts, these benefits have been calculated using the DfT's WITA 2.0 software using outputs from the SEDMMTM.

Table 6.9 Benefits Arising due to Labour Supply Impacts

	Benefit (£,000s)				
	Bournemouth	**Poole**	**Christchurch**	**East Dorset**	**Region Total**
Labour Supply Impact	£7,100	£5,800	£2,600	£3,600	**£19,100**

Note: *2010 prices, discounted to 2010*

The strategy has the potential to generate modest labour supply impacts of approximately £20 million over the appraisal period. This benefit is driven by reductions in commuter travel times which has potential to increase the pool of employees for businesses and jobs for workers seeking employment.

7. Implementation Plan

7.1 Prioritisation and Funding

The Mobility Strategy will inform future plan making and transport capital programmes, aiding scheme identification and prioritisation so that decisions can be made in future years according to available opportunities and funding. Whilst some interventions may be delivered alone, in other cases interventions will be delivered in combination as part of schemes or programmes.

Any transport intervention requires careful consideration against defined objectives and policies to ensure that it can contribute to the wider role of travel within society. Larger schemes, especially those requiring significant funding such as infrastructure, will be required to undergo specific business case development to ensure that they provide value for money, whilst meeting their core strategic aims. These larger schemes tend to rely upon central Government funding streams which are often highly competitive and can appear at relatively short notice, perhaps reflecting a change in central Government policy. The competitive application processes mean that schemes that already have option and feasibility assessments completed can respond quickly to any bidding process. Whilst the longer-term investment priorities of the Mobility Strategy may seem distant, preparatory work in the near-term provide the potential for strong funding applications to be prepared.

Although larger schemes have the potential to be individually transformational, the approach adopted within this Mobility Strategy has been to balance these with the wider use of smaller, shorter-term measures which collectively can provide similarly transformational benefits. The larger schemes have therefore been phased towards the end of the strategy period to help build upon this collective transformation, whilst providing sufficient time for robust feasibility studies and business cases to be prepared.

However, the indicative timescales outlined in the following section must be treated with great flexibility to ensure that any potential opportunities can be realised. This flexibility may enable strategy benefit realisation to be brought forward and opportunist schemes or interventions to be trialled or funded when available, and for the later strategy period potentially used to instead consolidate and expand upon these benefits.

7.2 Prioritisation Plan

Schemes by their nature, design and location, take different amounts of time and resource to develop from concepts to deliverable interventions. This section therefore provides an indication of how the interventions in the Mobility Strategy could be phased and delivered to achieve the Strategy's vision. This plan is therefore one potential scenario of investment that reflects the interventions and phasing applied and assessed within the transport modelling.

Schemes and their constituent elements are not defined in detail, as each scheme will need to be developed into a fully tested and deliverable intervention, requiring stakeholder engagement, consultation and design and a specific business case made for funding approval. This approach also enables the Mobility Strategy to be adaptable and schemes can be adapted to suit the policy priority and funding opportunities as they arise. As time passes and the strategy progresses, new policy and new or opportunistic interventions will arise and these too will need to be considered, appraised and appropriate business cases made. Some, such as mass-market adoption of Connected and Autonomous Vehicle technologies, could have significant implications broader than the scope of this Mobility Strategy, requiring re-evaluation of public spaces, highway use, infrastructure and planning policy. Exploiting the potential advantages of new technologies will require flexibility and opportunism.

It is intended that the implementation plan of interventions becomes a rolling programme of schemes with the prioritisation and phasing kept under annual review by Dorset LEP, BCP Council and Dorset Council. This will ensure that the outcomes and impacts of already committed interventions are fully understood prior to rolling out the short term schemes, and future phases are modified to reflect changes (anticipated and unintended) in behaviour and network performance. Changes to policy may require reprioritisation or new interventions to be included in the implementation plan, and the annual

review is an appropriate mechanism to manage this. Suitable monitoring and evaluation will therefore continue to be an important pillar of the Strategy, as set out in Section 7.7.

The implementation plan has broken down the different topics/interventions set out in the Strategy and presented a recommended delivery programme under the following timescales:

- **Short term:** defined as 0-5 years, aligning with the short-term modelling period;
- **Medium term:** defined as 6-10 years, aligning with the medium-term modelling period; and
- **Long term:** as 11-20 years, aligning with the long-term modelling period.

The interventions included in the following sections were all part of the short list prepared and agreed with Dorset LEP, BCP Council and Dorset Council and key stakeholders. As such, they have all been part of the detailed appraisal and assessment process undertaken during this commission, and their assessment demonstrated strong alignment with, and therefore contribution to, the Mobility Strategy's vision and objectives. As noted in Section 3 and the technical appendices, the interventions included in the long and short lists varied in their level of development and readiness for implementation. This is merely a reflection of the range of solutions, measures and schemes identified through this commission.

The Mobility Strategy implementation plan must build on and use each intervention's current status, rather than assuming that all could progress at the same speed to delivery. This will ensure that the implementation is grounded on how long each type of intervention may take to become fully ready and the steps that are needed. To address these issues, the following classification of interventions has been used through each of the three implementation phases:

- **Committed interventions:** including those that are part of existing programmes and for which funding has been secured. Including these interventions is important so that the Mobility Strategy builds on existing and near future investment;
- **Defined interventions:** these are defined interventions included in the short list but where no funding has been secured and no implementation schedule identified. Many such schemes seek to build on existing and committed works, whilst others are new intervention types for the area but have a strong business case for delivery and potential locations within South East Dorset have been defined; and
- **Concept interventions:** the process of developing a long and short list of interventions inevitably generates a range of concept solutions, including measure that have proven to be successful in other areas of the UK. However, such measures would require further specific planning and design before they could be considered for implementation. Whilst some concepts could be delivered relatively quickly, such as those transferring good practice from other towns, some will require significant time, particularly where technological systems need to be developed, piloted and tested. This lead-in time is an important consideration for the implementation planning through to 2038.

7.3 Short Term Phase (*0-5 years*)

The interventions set out below can be implemented in the short term and within the first period of the Mobility Strategy (2020 – 2023). Within each of the three types of interventions (committed, specific and concept) the proposed interventions from each of the topics set out in Section 3 are presented.

Committed interventions

The committed interventions included within the short term phase are all funded as part of the DfT's Transforming Cities Fund (TCF). In a joint bid by Bournemouth, Christchurch and Poole Council (BCP Council) and Dorset Council, £79 million was awarded for a programme of sustainable transport measures to transform local transport options, connecting local people and local jobs and education. Additional funding from SED City Region Contribution and third party contributions will contribute approximately £20million to the delivery of the TCF packages of schemes. It is important that the Mobility Strategy builds on this existing programme of committed investment and this has been represented in the Do Something modelling scenarios.

Active Travel
The TCF programme will enable the expansion of the existing Beryl Bike hire scheme across a wider area of the SED city region and the incorporation of e-bikes across the network allowing a more accessible bike sharing scheme. Beryl bikes are currently available for hire within the Bournemouth and Poole area, where it has demonstrated a strong user market with 12,000 users and over 42,000 journeys since the launch in July 2019.

Beryl Bikes have developed proposals to incorporate 300 e-bikes to the current Beryl bike provision in the area, distributed across the existing bays initially for use across the whole SED city region. They will be concentrated in Christchurch and along corridors S6 and C1 (see following sections for more detail). The e-bikes are intended to widen the appeal of the bike scheme to a broader age group and geography, as well as enabling their use for longer distance journeys.

It is assumed that the e-bike provision will be delivered in the area between 2021 and 2022, with costs incurred also in this time frame. The scheme is procured using the existing contract with Beryl Bikes.

Public Realm and Accessibility
South East Dorset's wayfinding is a comprehensive network of information totems and signs to enable people to intuitively follow walking and cycling routes both along and to the Connectivity and Cycleway Corridors, key employment/education sites and places of interest/destinations. This ongoing scheme is part of the TCF programme.

The wayfinding package of improvements will provide up to 140 new wayfinding totems across the South East Dorset city region, 20 'Smart' interactive totems, and a further 450 direction signs along sustainable transport corridors and the Public Rights of Way network. 90% of these wayfinding totems are proposed to be installed in areas where there are currently no signs to public transport and no maps or information boards.

It is estimated (based on 2019 prices) that the cost for improving wayfinding provision is £1.75millon. These costs will be incurred between 2021 and 2023 such that all will be installed by the completion of the cycling and sustainable transport corridors and within the short term phase of the Strategy. The procurement route is via an existing contract with 21st Century supported by local suppliers for civils works.

Cycling Corridors
Part of the TCF programme will see the delivery of several cycling corridors over the next three years. The cycle corridors are defined as 'a wider network of cycle routes, complementary to these corridors with improvements to infrastructure and facilities again connecting homes to jobs and pupils to schools and education centres safely providing direct, safe and continuous cycle routes".

A sifting exercise using the Early Assessment Sifting Tool (EAST) and a review of the connectivity between the cycling corridors, Connectivity Corridors, housing and employment sites, and existing cycle routes resulted in four cycling corridors proposed under the TCF programme. The four cycling corridors committed have been aligned with the developing LCWIP and are as follows:

- Cycling Corridor - C1 - Lansdowne to Christchurch;
- Cycling Corridor - C2 - Bournemouth to Ferndown;
- Cycling Corridor - C3 - Wareham to Poole; and
- Cycling Corridor – C5 – Merley to Poole.

Figure 7.1shows the alignment of the committed TCF cycling corridors, along with the Sustainable Transport Corridors (set out in section below). The cycling corridors are focused on the east and the west of the study area. They will be constructed in phases by 2023 and estimated costs are shown in Table 7.1.

Table 7.1: TCF Cycling Corridor Costs

Corridor	Initial Estimate of Costs	Total Cost
C1 - Lansdowne to Christchurch	£4,600,000	**£28,300,000**

C2 - Bournemouth to Ferndown	£17,000,000	
C3 - Wareham to Poole	£3,500,000	
C5 - Merley to Poole	£3,200,000	

Source: TCF Strategic Outline Business Case

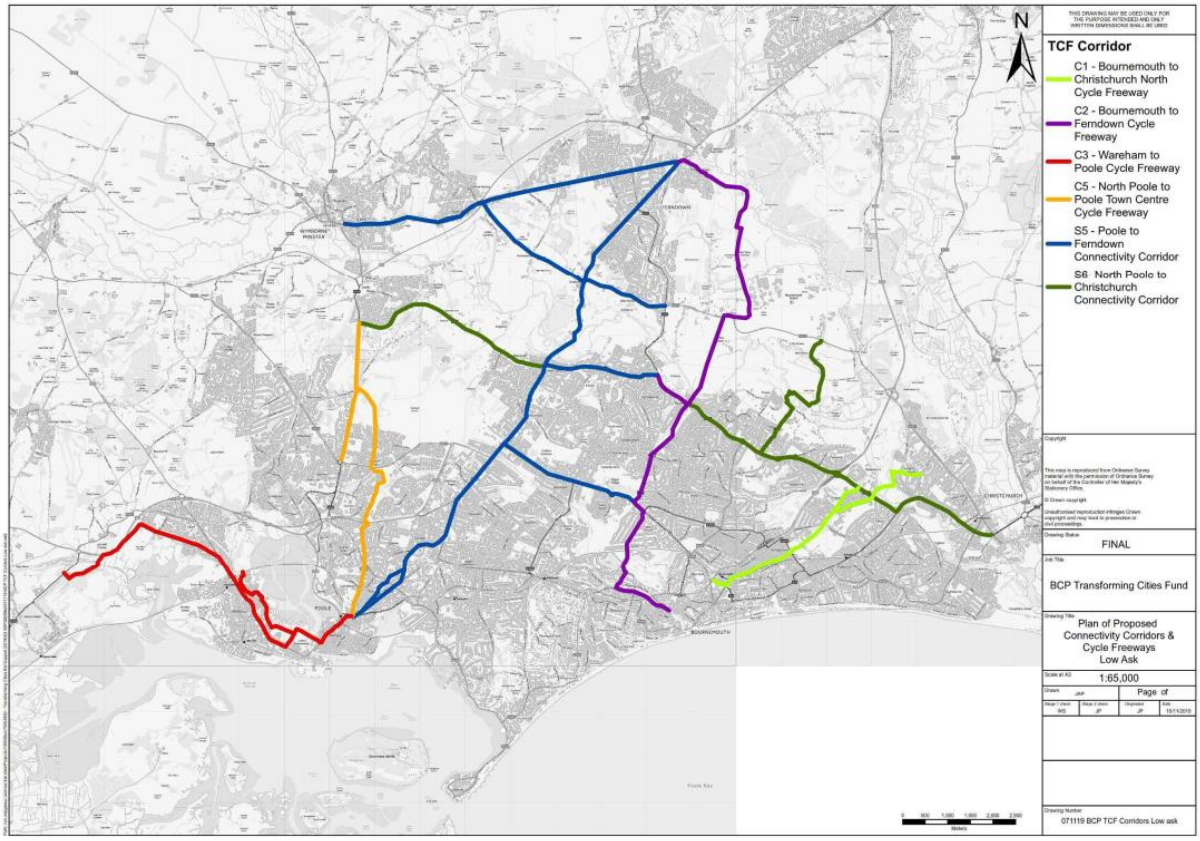


Figure 7.1: Map showing committed TCF cycling corridors, and Sustainable Transport Corridors

Sustainable Transport Corridor

A series of corridors have been identified connecting key employment and residential areas of the SED city region. Three Sustainable Transport Corridors have been identified through the DfT EAST process (Early Assessment and Sifting Tool), scoring the highest. The selected corridors are:

- Sustainable Transport Corridor - S3 - Wimborne to Christchurch (Bournemouth
- Sustainable Transport Corridor - S5 - Poole to Ferndown
- Sustainable Transport Corridor - S6 - North Poole/ North Bournemouth

The alignments of the corridors is shown in Figure 7.1. Along each of the corridors, a package of interventions has been identified which support the TCF and local objectives. The interventions encompass:

- Improvements to junctions;
- Local network management improvements to prioritise buses;
- Improved links between corridors;
- Bus stop and infrastructure upgrades; and
- Cycle and pedestrian infrastructure such as improved crossings and off-road alignments.

The Sustainable Transport Corridors will be constructed in phases over three years and estimated costs are shown in Table 7.2. They are funded through the TCF funding and procured through Gen 3/4 Contract and local suppliers for minor works.

Table 7.2: Sustainable Transport Corridors Costs

Corridor	Initial Estimate of Costs	Total Cost
S3 - Wimborne to Christchurch (Bournemouth)	£19,000,000	**£67,800,000**
S5 - Poole to Ferndown	£24,500,000	
S6 - North Poole/ North Bournemouth	£24,300,000	

Table 7.3 provides a summary of the committed short term interventions that will form the foundation and starting point for the Mobility Strategy.

Table 7.3: Mobility Strategy Implementation Plan – Short Term Committed Interventions

Topic	Sub-Topic	Committed Interventions
Active Travel	Cycle Hire	Beryl Bikes
Public Realm and Accessibility	Active travel infrastructure improvements	Wayfinding Network
Cycling Corridor		C1 - Lansdowne to Christchurch
		C2 - Bournemouth to Ferndown
		C3 - Wareham to Poole
		C5 - Merley to Poole
Sustainable Transport Corridor		S3 - Wimborne to Christchurch (Bournemouth
		S5 - Poole to Ferndown
		S6 - North Poole/ North Bournemouth

Short term, well-defined interventions

The committed interventions included within the short term phase are all funded as part of the DfTs Transforming Cities Fund (TCF). In a joint bid by Bournemouth, Christchurch and Poole Council (BCP Council) and Dorset.

Travel Demand Management

Developing and initiating Travel Plans can result in tangible benefits and a shift to more sustainable modes. A Travel Plan is a package of practical measures that are tailored to specific needs to help people transition to greener travel choices, so as to reduce reliance on cars. Developing Travel Plans for large areas/destinations that see a big movement of employees and customers, such as Bournemouth Airport and Aviation Park, and Ferndown Industrial Estate, has the potential to reduce congestion through enabling/promoting sustainable transport. They are simple and quick to implement, and easily deliverable within the first five years of the Strategy. The aforementioned sites were identified in the agreed short list of interventions and are therefore the priorities for the short term phase.

The remaining Travel Demand Management interventions, shown in Table 7.4 require additional feasibility studies and design prior to implementation. Investment in alternative modal solutions was also identified, such as funding to enable a more frequent services of the Sandbanks Ferry. The multi-modal chain-ferry service carrying pedestrians, cyclists and up to 48 motor vehicles crossing the entrance to Poole Harbour between Sandbanks and Shell Bay entered service in 1994. It runs a daily timetable except for poor weather episodes and when the vessel is undergoing bi-annual refit. As the ferry ages, reliability may become an increasing issue affecting services. Investment was identified to support increases in service frequency and ensure the ferry can be maintained and secure the reliability of the crossing service.

It is recognised that interventions that actively discourage or prevent car use can be challenging to implement, even when specific locations are defined such as these schemes. However, with political/stakeholder support, these interventions can be developed and implemented within a short

timescale, helping to transform the urban space, giving priority back to pedestrians and cyclists in specific locations. A key role of this Mobility Strategy is to demonstrate, through the modelling and phasing work, that traffic management measures such as selected road closures or access constraints have an important part to play in the wider packages and phases of investment.

Policy
This Mobility Strategy has been developed to align with existing transport and land use policies. It is vital that any future strategies have corresponding visions and timescales to ensure that they remain complementary and not conflicting.

Changes in BCP Council Local Plan policy to support new developments being sustainable, such as those shown in Table 7.4, would endorse the National Planning Policy Framework (NPPF) and introduce good practice for the future. Putting targets in policy is the starting point for decision making and can be completed at a low cost and within a five-year time frame. All changes in policy will need to be consulted on with key stakeholders and the community.

Citizens' assemblies give members of the public the time and opportunity to learn about and discuss a topic; in this case, transport related topics would be the focus. As of October 2019, a Citizens Assembly was being considered to engage and inform the public. This consideration could be delivered within the first period of the strategy.

Enabler
The 'enabler' topic of interventions defined in Section 3.2 covered a range of measures that, although they may not be transformational in their own right, have the potential to engender behaviour change and enable other interventions to be successful. One intervention included in the agreed short list of measures, but which was not defined beyond the concept level, was free bus travel for employees at major out of town employment sites. Reducing/removing the cost of the commute for users at the point of use should influence travel behaviour and choices (i.e. a shift from car to bus), thereby reducing the number of vehicles on the highway network at peak times. For employers, it reduces the need to provide parking, freeing land for more productive uses. Reducing the number of cars results in an improvement in air quality and helps to cut the organisations carbon footprint. With organisation and buy-in from employers, this intervention can be implemented within a short timeframe and provide great benefit.

Active Travel
The active travel topic of interventions included a range of measures to directly promote walking and cycling to support TDM and other intervention types. For example, cycle hire schemes are a low-cost intervention that was included within the short list, which can be implemented quickly and efficiently. It should build on the success of Beryl Bikes hire scheme and be able to evolve over this Strategy timeline to meet the needs of the population. Cycle Hire at transport hubs will improve connectivity and mobility.

Public Realm and Accessibility
Interventions under the public realm and accessibility topic are about providing connectivity between transport hubs (e.g. rail stations) and the town centres, and would build on the committed wayfinding work. The public realm interventions from the agreed short list that are included in Table 7.3 are sufficiently defined that they can be delivered in the early period of the Strategy. These include solutions at Bournemouth and Poole stations. These solutions are also relatively low cost and don't require complex/extensive design and planning prior to implementation, although preliminary and detailed design work will be required. Such solutions include improvements in wayfinding and route visibility (a wayfinding package is included within the TCF funding), street furniture and greenery, removal of railings and providing street lighting and step free access. These are simple yet affective solutions to improve public realm and naturally direct people between the transport hubs and the town centres. These solutions can be implemented gradually over the first period of the strategy to spread out design resources and to procure funds.

Cycling Corridor
As set out previously, there is a programme of committed investment ongoing through the TCF initiative, incorporating four cycling corridors. As part of the TCF funding submission a detailed review of the proposed costs and delivery of schemes was undertaken, and detailed modelling undertaken in co-operation with the DfT. Through this process it was concluded that the following three cycling

corridors would not be delivered by the end of the TCF programme in March 2023 and were therefore sifted out:

- C4 - Canford Heath to University;
- C6 - Holes Bay to Fleetsbridge; and
- C7 - Holes Bay Road to Creekmoor P&R.

These corridors require further detailed assessment, planning, programming to develop interventions that provide value for money, and a suitable funding stream identified. However, these corridors would be deliverable towards the end of the first five years of this Strategy, following a similar programme of the TCF Cycling Corridors and based on the assumption that the committed TCF corridors have the anticipated outcomes. Implementing these three routes would complement the first tranche and provide a more comprehensive coverage of the study area.

Safety
The safety interventions included in the short list and of a specific nature have the overarching ambition to reduce the number and severity of deaths and injuries on local roads. The extension of the Dorset Strategic Road Safety Partnership to 2025 would help to continue the policy message that Dorset wants to create an environment where safety comes first. These are low cost measures which would benefit from continuing throughout the lifecycle of this Mobility Strategy. A specific and geographically defined safety improvement at Lansdowne roundabout was also retained in the agreed short list, with the objective of improving the safety for all road users at this busy junction. This scheme will require design, costing and a suitable funding source identified, but could be delivered within the short term phase of the Strategy.

Rail
The nature of rail-related interventions with complex stakeholder structures across track, station and service ownership and operation, often result in long development/planning periods prior to implementation. This is reflected in this Implementation Plan. In the short term, the continuation of the relationship between BCP Council, Dorset Council, Network rail and Train Operators requires no funding or additional costs. The engagement should continue throughout the Strategy to develop a pipeline of schemes and improvements, including station accessibility improvements as set out above. This would include opportunities to open new stations in Dorset and explore the benefits and issues associated with relocation of others that could be implemented later in the strategy.

Table 7.4: Mobility Strategy Implementation Plan – Short Term Well Defined Interventions

Topic	Sub-topic	Well-defined Interventions	Next Steps	Timescales for Delivery	Who is project sponsor for delivery?	Level of Funding Needed
Travel Demand Management	Travel Plans for Key Sites	Bournemouth Airport and Aviation Park Travel Plan	Travel Plan development	12-18 months?	Employers/site operators BCP	Low
		Ferndown Industrial Estate Travel Plan				Low
	Alternative modal solutions	Investment in Sandbanks Ferry	Feasibility study and costings	2-3 years	BCP Council/Dorset Council	Medium
	Traffic and Parking Management	Closure of Poole Park to through-traffic	Option development and design solutions Traffic assessment Public consultation	3-5 years	BCP Council/Dorset Council	Low
		Exclusion of cars and bikes on The Quay at Poole Harbour	Option development and design solutions Traffic assessment Public consultation	3-5 years	BCP Council/Dorset Council	Low
Policy	Political Strategy	Alignment of this Mobility Strategy with other policies	Policy review Promotion of Mobility Strategy	5 years	BCP Council/Dorset Council	Low
		Citizens assembly in study area	Develop options, consider public consultation	12-18 months	BCP Council/Dorset Council revenue funding	Low
	New Developments	Development of housing close to town centres	Define priority locations as part of Local Plan review	18 months	Developer investment	High
		Reduction in car parking in new developments	Review/revision of current parking standards Ensure robust Travel Plans and sustainable solutions are included in development designs	12 months	Developer contributions Central Government sustainability funding	Medium
Enabler	Bus Travel	Provision of free bus travel for employees	Employers undertake cost assessment	1-2 years	Employers/site operators	Medium
Active Travel	Cycle hire	Transport Hubs - Provision of cycle hire at key transport hubs	Design/costings Business case	12 months	Landowners BCP Council/Dorset Council Bike Hire Companies	Low

Topic	Sub-topic	Well-defined Interventions	Next Steps	Timescales for Delivery	Who is project sponsor for delivery?	Level of Funding Needed
Public Realm and Accessibility	Station Improvements	Improved public realm and access to Bournemouth Station.	Feasibility study/ designs initial cost assessment	2-3 years	BCP Council	Low
		Improved walking route between Poole Station and Poole town centre	Feasibility study/ Wayfinding Strategy	2-3 years	BCP Council	Low
	Links from transport hubs to town centres	Pedestrian/ cycle link from Stadium to the town centre: as part of regeneration proposals for the Stadium and Town Centre North Area	Feasibility study/ Wayfinding Strategy	2-3 years	BCP Council	Low
		Transport Hubs - Bournemouth Rail and Bus connectivity	Feasibility study/ Wayfinding Strategy	2-3 years	BCP Council	Low
	Active travel infrastructure improvements	Holes Bay walkway	Option development and design solutions	2-3 years	BCP Council	Medium
Cycling Corridors		Cycling Corridor - C4 - Canford Heath to University	Business Case	2-3 years	BCP Council/Dorset Council	Medium
		Cycling Corridor - C6 - Holes Bay to Fleetsbridge	Business Case	2-3 years	BCP Council/Dorset Council	Medium
		Cycling Corridor - C7 - Holes Bay Road to Creekmoor P&R	Business Case	2-3 years	BCP Council/Dorset Council	Medium
Safety	Safety Policies	Dorset Strategic Road Safety Partnership	Update to Safety Strategy	6 months	Dorset Council	Low
	Targeted Safety Improvements	Lansdowne roundabout	Option development and appraisal Business case	2-3 years	BCP Council/Dorset Council	Medium
Rail	Political relationship	Rail	Authorities continue engagement with Network Rail and the Train Operators to develop a pipeline of schemes and improvements	Ongoing	BCP Council/Dorset Council/ Network Rail	Low

Short term, concept interventions

The final group of short-term interventions are those that remain at the concept stage of development within the short list and therefore would require some additional planning or assessment prior to delivery. However, these interventions are all considered viable for delivery in the short term, with support from businesses and schools.

Travel Demand Management
Change in business working practices is a concept that is being delivered all over the UK, in part to reduce the need to travel/commute daily. Flexible working practices are reliant on businesses being able to function effectively and seeing the benefit of such arrangements. However, many of the TDM interventions listed in Table 7.5 could be implemented quickly and with little capital or revenue costs.

Introducing flexible working would allow employees the opportunity for a healthy work-life balance, whilst increasing productivity and improving employee engagement and retention. Flexible working also has a positive impact on the traditional rush hour, allowing employees to shift their departure times to fit around their schedule, and encourage sustainable travel habits (e.g. adapting the workday around public transport timetables). Travel Planning and grants for active and sustainable travel can also encourage a mode shift and should continue to be promoted at key employment sites across the South East Dorset area.

Other TDM concepts that would have a strong strategic fit in the area include car clubs, transport hubs at key employment locations and an area-wide travel planning/smarter travel choices programme. This would build upon the previous “Three Towns Travel (3TT)” and “BESMArT” programmes, and potentially interface with elements of the TCF programme. Work would be required to define more precise areas of intervention.

Some initiatives for the Quality Bus Corridors were identified for Intelligent Transport System enhancements to achieve greater efficiency for services in the short term. These include optimising signals and prioritising buses, variable message signing and CCTV to improve network efficiency and achieve greater journey time reliability for users. These could be delivered through the South East Dorset Bus Partnership, with funding sources to be identified.

The final area of TDM concepts in Table 7.5 are those that would seek to constrain car use, through interventions such as modal filters and road closures. As noted previously, although these could also be implemented in the short term they will require detailed design and planning, stakeholders engagement and political support.

Policy
A feature repeatedly raised during early stages of evidence gathering for the strategy is the need for conviction to deliver change, especially against sometimes vocal opposition. Political Bravery is therefore about implementing a strategy with a suite of evidenced measures which collectively achieve a desired outcome and recognising that not all measures will be universally popular. Committing to deliver the strategy is achievable in a short timeframe; however, it will require collective courage and involve partnerships and consensus to overcome controversy. Seeds can be sown early in the Strategy period, but it may not transpire until the middle of the Strategy.

The other interventions in this category are more forthcoming such as developing a Capital Maintenance Strategy to deliver regular maintenance of highways, footways, cycleways and bus infrastructure. This policy is straightforward to compose but does require an ongoing budget to be able to administer the regular maintenance.

A policy to ensure land for development is in a location where sustainable travel links exist and can be improved will support the policy intervention defined in Table 7.5 (short term, well-defined)

Enabler
Technology is playing an ever more active role in mobility. The ITSO standard has been making travelling on public transport throughout the UK seamless and easier by enabling smart ticketing technology since 2002. Smart Cards and Travel apps improve the customer and operator experience

allow passengers of public transport to seamlessly hop on and off, as well as having the flexibility to buy tickets in advance. Costs for these interventions are front-loaded but have low maintenance fees, making these solutions easy to implement within the first five years of the strategy.

Provision of cycle infrastructure at key locations and the provision of training widens the bracket of people that are able to cycle. These interventions are quick and simple to implement and extremely low cost. Free cycling training would require some funding.

Active Travel
Temporarily reconfiguring street layout favours active travel and creates a safe space for children to be able to play. The interventions included in Table 7.5 require little detailed planning but will require community engagement and consultation. The process of obtaining a Temporary Traffic Order (TRO) was simplified in 2019 making it easier for those who want to create Play Streets, boosting the health and wellbeing of children, families and communities.

Public Realm and Accessibility
Improvements to active travel infrastructure will help encourage the shift towards active modes of travel. The interventions described below will require thought and planning to create a coherent and consistent network. Existing network plans should be continually reviewed with little cost associated the updates. This will take time to design; however, once a plan has been formulated, it is deliverable within a couple of years.

Safety
Marketing campaigns to encourage children to walk to school more provides health, social, economic and environmental benefits. They are simple to implement by schools and often require no input from council resources; resources are provided by charities such as Living Streets.

At present, parking on pavements and verges is permitted unless specifically prohibited by a local authority, requiring a formal Traffic Regulation Order (TRO) to prohibit the activity. The House of Commons Transport Select Committee recommended that Government introduce a ban on pavement parking in August 2019 and DfT are consulting to understand the public's view on prohibiting pavement parking and how a ban could be enforced. If the DfT change the legislative process, it could be easier for councils to enforce prohibition without the need for a formal TRO.

Improving safety at key junctions for pedestrians and cyclists would take longer to implement. Audits would be required to determine the quality of existing infrastructure, followed by design, engagement, and implementation. Although there are more steps to be undertaken, and funding is required, this intervention is still implementable within the first five years of the Strategy and ties in with other interventions to improve the cycle and pedestrian connectivity. A 20mph speed limit in specific areas would also contribute to an improvement in safety for pedestrians and cyclists.

Table 7.5: Mobility Strategy Implementation Plan – Short Term Concept Interventions

Topic	Sub-Topic	Concept Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
Travel Demand Management	Travel Plans for Key Sites	Increase in sustainable travel to/from tourist sites	Bus operators to review timetable to increase services. Install cycle parking	2-3 years	Bus Operators BCP Council/Dorset Council	Low
	Change in business working	Businesses to introduce flexible working	Change in business policy/working practices	6-12 months	Employers/site operators	Low
		Hot desk swap shop	Change in business policy/working practices	6-12 months	Employers/site operators	Low
		Reducing the demand of Workplace Parking	Reallocate parking spaces/change in business policy/working practices	6-12 months	Employers/site operators	Low
		Peak hour spreading	Change in business policy/working practices	6-12 months	Employers/site operators	Low
	Alternative modal solutions	Intelligent Transport Systems on the Quality Bus Corridors	Feasibility study/ designs initial cost assessment	12 months	BCP Council/Dorset Council Bus Operators	Medium
		Promotion of car clubs	Marketing and communications within Transforming Travel programme	6 months - ongoing	Operators BCP Council/Dorset Council revenue funding	Low
		Transport Hubs - Cycle grant scheme for businesses	Develop options for grant scheme Business case	12-18 months	BCP Council/Dorset Council Central Government sustainability funding	Low
		Travel Planning/Smarter Travel Choices Programme	Marketing and communications within Transforming Travel programme	6 months - ongoing	BCP Council/Dorset Council revenue funding	Low
	Traffic and Parking Management	Modal filters on side roads	Option development and design solutions Public consultation	2-3 years	BCP Council/Dorset Council Central Government sustainability funding	Low
		EV / Cargo bike last mile deliveries	Promotion and engagement with operators/businesses	1-2 years	Operators/businesses/retailers Central Government sustainability funding	Medium

Topic	Sub-Topic	Concept Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
			Marketing and communications within Transforming Travel programme			
		Road Closures	Option development and design solutions Traffic assessment Public consultation	1-3 years	BCP Council Communities	Low
		Enforcing controlled zones using Geo-fencing	Feasibility study and benefits appraisal	2-3 years	BCP Council	Medium
Policy	Political Strategy	Political Bravery	Commit to deliver adopted strategy	6 months - ongoing	Dorset Local Enterprise Partnership BCP Council/Dorset Council	Low
	Investment	Capital Maintenance Programme	Commit resources to maintenance infrastructure for all modes	12 months	BCP Council/Dorset Council	High
		Investment into sustainable travel	Commit funding for sustainable travel initiatives and infrastructure	6 months - ongoing	BCP Council/Dorset Council Developers Central Government sustainability funding Dorset Local Enterprise Partnership	High
	New Developments	Sustainable land use	Land zoning allocations within Local Plan refresh	12-18 months	BCP Council	
Enabler	Technology	Travel App	Scoping of App requirements and existing market Procurement of vendor for development of App	1-2 years	Operators BCP Council/Dorset Council	Medium
		ITSO Compliant Smart Card	Scoping of local market and comparator experience Seek operator and user views Business case	2-3 years	Operators BCP Council/Dorset Council	Medium

Topic	Sub-Topic	Concept Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
	Cycling	Transport Hubs - Provision of cycle parking at key locations	Design/costings	12 months	Landowners BCP Council/Dorset Council	Low
		Free adult cycle training	Continued funding and marketing/communications for ongoing training opportunities	6 months - ongoing	BCP Council/Dorset Council Central Government sustainability funding	Low
Active Travel	Cycle Hire	E-bike hire scheme	Operator engagement Marketing and communications within Transforming Travel programme	12-18 months	Operators BCP Council	Low
	Active Environments	Car-free Sundays	Event design and planning Marketing and communications within Transforming Travel programme	1-2 years	BCP Council Retailers Communities	Low
		Playstreets	Option development and design solutions Traffic assessment Public consultation	1-2 years	BCP Council Communities	Low
Public Realm and Accessibility	Active travel infrastructure improvements	Consistent quality of cycle routes across the South East Dorset area	Audit of routes/LCWIP	12 months	BCP Council Sustrans	Low
		Update to Rights of Way Improvement Plan	Undertake update	12 months	Dorset Council Landowners	Low
	Public Realm	Public Realm Improvements (Reducing the need to travel)	Feasibility study/ designs initial cost assessment Public consultation	2-13 years	BCP Council Communities Business/retailers	
Safety	Safety Policies	20mph speed limit	Scheme development Public consultation	1-2 years	BCP Council Communities	Low
		Ban on Pavement parking	Devise plan for enforcement Public consultation	12-18 months	BCP Council Communities Business/retailers	Medium
		Roadwork user priority	Review best practice examples, define plan	1-2 years	Statutory Undertakers (utilities) BCP Council/Dorset Council	Low

Topic	Sub-Topic	Concept Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
	Targeted Safety Improvements	Improvements of key junctions	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Sustrans Central Government sustainbility funding	Medium
	School Safety	Safe routes to Schools	School engagement, marketing and communications	12 months - ongoing	Schools Communities BCP Council/Dorset Council	Low
		Walk to School Campaigns	School engagement, marketing and communications	12 months - ongoing	Schools Communities BCP Council/Dorset Council	Low

7.4 Medium Term (*6-10 years*)

The medium term implementation plan for the period up to 2031 will build on the broad foundation of the short term strategy, completing networks of connectivity and pushing forward more significant investment packages.

Medium term, committed interventions

Interchange
A new bus station and associated infrastructure is just one component of a broader transformative project proposed as part of the 'Heart of Poole' regeneration scheme, appreciably improving connectivity for bus users. The regeneration programme is a significant undertaking, led by BCP Council in partnership with stakeholders. Funding is to be obtained from a range of sources including seeking grants from Central Government and National Lottery Heritage.

Table 7.6: Mobility Strategy Implementation Plan – Medium Term Committed Interventions

Topic	Sub-Topic	Committed Interventions
Interchange	New Transport Hub	New bus station and associated off-site bus depot element of the Heart of Poole development scheme

Medium term, well-defined interventions

These interventions are generally defined but may require additional planning, consultation or identification of funding and so are phased for the medium term. Many of these interventions enable or enhance mobility, such as new interchange hubs or new service improvements. Table 7.7 highlights the interventions that fall under this category. There is less detail provided for each intervention compared to Table 7.3 and Table 7.6 because all the interventions require some level of feasibility/options development and have no funded committed to them.

Travel Demand Management
The potential strategic closure of individual car parks alongside the introduction of enhanced sustainable travel networks has been identified as a means of managing car-based travel demand in the medium term. Identification of specific car parks, such as Bath Road outlined in the table below, could be considered within the context of the shorter-term car parking strategy work. As parking provided within the area currently provides a financial benefit to the local authorities, financial impacts of any closures would need to be considered realistically against wider strategic objectives. The closure and sale of certain car parks could provide a beneficial impact through land use change, supporting urban regeneration or wider housing and employment delivery, in addition to revenue income generated from the sale.

Public Realm and Accessibility
Several interventions in and around central Poole have been identified, as shown in the table below, including improvements to the bus and rail stations. The proposals aim to improve the way in which the public transport network provides access to, and interacts with, the High Street. The aim is for these improvements to encourage sustainable travel behaviours, whilst supporting the local economy and regeneration aspirations. Funding for enhancements will need to be identified and commercial cases made to project sponsors. Although identified for delivery in the medium term, some of the individual scheme elements may be relatively small and opportunistic approaches for funding may enable some aspects of a wider plan to be delivered in a shorter time period. The aspiration should be that these improvements are all delivered within a 10-year time horizon.

Safety
The concept of 'Vision Zero' builds upon a concept originated in Sweden, the nation which since the 1990s regularly has one of the best road safety records in the European Union. The 'Vision Zero' ambition to end death and injury on the road networks has also been adopted by cities globally, including London recently. Working towards and achieving such an ambition would need to build upon the short term policy recommendations and require continued engagement with all transport operators. Given the breadth of the topic, a wide number of interventions would be identified,

developed and delivered over the medium term as part of a wider 'kick-start' programme, or alternatively delivered as funding opportunities present themselves.

Sustainable Transport Corridor
A detailed review of the proposed costs and delivery of proposed schemes within the draft TCF Strategic Outline Business Case was undertaken and detailed modelling working in co-development with DfT. It was concluded that the following sustainable transport corridors would not be delivered by the end of the TCF programme in March 2023. The Sustainable Transport Corridors are:

- Sustainable Transport Corridor – S1 - Poole to Christchurch
- Sustainable Transport Corridor – S2 - Bournemouth to Ferndown/Wimborne
- Sustainable Transport Corridor – S4 - Wallisdown Road/ Talbot Avenue
- Sustainable Transport Corridor – S7 - Poole to Wimborne
- Sustainable Transport Corridor – S8 - Broadstone to A349

These corridors require further detailed planning and programming; however, if prioritised with appropriate funding, will be deliverable within the first ten years of this Strategy. These interventions could draw upon the lessons and benefits observed in the shorter-term sustainable transport corridors to assist funding applications and complete an integrated network, which would provide a significantly greater impact in meeting the strategy's vision.

Bus
A series of wider, strategic bus interventions are proposed to improve sustainable travel across the wider region. Although they provide individual benefits, delivered collectively alongside the sustainable transport corridors they would help provide a step-change in bus travel. Continuing the relationship between BCP Council, Dorset Council and the bus operators requires no funding or additional costs. This communication should continue throughout the strategy to develop a pipeline of schemes and improvements which are viable and deliverable.

Interchange
Several new transport hubs have been identified at defined locations, as shown in the table below, along with enhanced accessibility for 6 rail stations. These proposals will improve connectivity and interchange between transport services, benefitting users. Funding for enhancements will need to be identified and commercial cases made to project sponsors. Although identified for delivery in the medium term, some of the individual schemes may be relatively small and opportunistic approaches for funding may enable some to be delivered relatively quickly and in a shorter time period. The aspiration should be that these improvements are all delivered within a 10-year time horizon.

Rail
Continuing the relationship between BCP Council, Dorset Council, Network Rail and Train Operators requires no funding or additional costs. Communication should continue throughout the strategy to develop a pipeline of schemes and priority improvements. This would include opportunities to provide new, or amend existing, services across Dorset and explore the benefits and issues associated with any changes, including interventions proposed later in the strategy.

Table 7.7: Mobility Strategy Implementation Plan – Medium Term Well Defined Interventions

Topic	Sub-Topic	Well defined Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
Travel Demand Management	Traffic and Parking Management	Closure of Bath Road Car Park	Traffic assessment Identification of alternative site use	2-3 years	BCP Council	Low
Public Realm and Accessibility	Station Improvements	Improved station facilities and building at Poole Station.	Options Development Outline Business Case	2-3 years	BCP Council/Dorset Council Network Rail	High
	Links from transport hubs to town centres	Railway improvements to the town centre as part of regeneration proposals: 2) Replacement of Level Crossing at High Street, Poole town centre.	Options Development Outline Business Case	2-3 years	BCP Council/Dorset Council Network Rail	High
		Transport Hubs - Poole Rail and Bus Station connectivity	Feasibility study/ Wayfinding Strategy	2-3 years	BCP Council	Low
Safety	Safety policies	Become a Vision Zero town	Development of Vision Zero Strategy	2 years		Low
Sustainable Transport Corridor		Sustainable Transport Corridor - S1 - Poole to Christchurch	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Highways England	Medium
		Sustainable Transport Corridor - S2 - Bournemouth to Ferndown/Wimborne	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Highways England	Medium
		Sustainable Transport Corridor - S4 - Wallisdown Road/ Talbot Avenue	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Highways England	Medium
		Sustainable Transport Corridor - S7 - Poole to Wimborne	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Highways England	Medium
		Sustainable Transport Corridor - S8 - Broadstone to A349	Option development and design solutions Traffic assessment	2-3 years	BCP Council/Dorset Council Highways England	Medium

Topic	Sub-Topic	Well defined Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
			Public consultation			
Bus	Improved frequencies accessibility	Improving access to Bournemouth Airport, the Port of Poole and Portland Port	Feasibility Study	1-2 years	BCP Council/Dorset Council Highways England Network Rail	Medium
	Improving accessibility	Express Bus services to Verwood, Ferndown, West Moors, Wimborne, Bournemouth Airport and Ferndown and BA business parks	Bus operators to review timetable to increase services/frequencies	1 year	Bus Operators BCP Council/Dorset Council	Low
		Express bus service for journeys in and out of the South East Dorset area	Bus operators to review timetable to increase services/frequencies	1 year	Bus Operators BCP Council/Dorset Council	Low
Interchange	New Transport Hub	Bournemouth Airport interchange / transport hub	Option development and design solutions Traffic assessment Public consultation	1-2 years	BCP/Dorset Council	Medium
		Transport Hubs - Creekmoor Park & Ride Enhancement	Bus operators to review timetable to increase services/frequencies	1 year	Bus Operators BCP Council/Dorset Council	Low
		Transport Hubs - Electric bus charging facilities	Feasibility Study	2-4 years	Bus Operators Electric Charging Station Company BCP Council/Dorset Council	Low
		Transport Hubs - Lansdowne (Bournemouth) Travel Interchange	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/ Dorset LEP	Medium
	Improved accessibility to rail stations	Improved accessibility at Branksome Station for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High
		Improved accessibility at Christchurch Station for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High

Topic	Sub-Topic	Well defined Interventions	Next Steps	Timescales for Delivery	Who is Project Sponsor for delivery?	Level of Funding Needed
		Improved accessibility at Hamworthy Station for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High
		Improved accessibility at Hinton Admiral Station for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High
		Improved accessibility at Parkstone Station for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High
		Improved accessibility at Pokesdown for all passengers.	Option development and design solutions Traffic assessment Public consultation	2-3 years	BCP Council/Dorset Council Network Rail	High
Rail	Improved performance of existing services	Improved performance and reliability on services through Dorset and the conurbation.	Proposal and timetable planning processes with Network Rail	2-5 years	BCP Council/Dorset Council Dorset LEP Network Rail	Medium
		Improved Sunday rail service frequency between Weymouth, Bournemouth and London,	Proposal and timetable planning processes with Network Rail	1-2 years	BCP Council/Dorset Council Dorset LEP Network Rail	Medium

Medium term, concept interventions

This group of conceptual interventions are identified for the medium term. Some measures in this grouping may be in use and proven in other UK locations but require additional research to determine their suitability for application in the South East Dorset area. It is anticipated that these measures will involve more detailed scoping and consultation of the issue and option development before moving towards creation of a business case and financial backing prior to any physical works. As such, only the descriptions of the interventions are included in Table 7.8. These interventions are phased for the medium term to reflect the time required to undertake these processes but also the need to prioritise other measures in the shorter-term phase of the strategy.

Travel Demand Management
Freight Hubs offer the ability to reduce the volume of freight and servicing vehicles entering urban centres have been identified, based on evidence from other parts of the UK. Consolidating loads for onward distribution by smaller, electrical or human-powered delivery vehicles provides opportunities to reduce the number of large and small commercial vehicles, with potential congestion, air quality and safety benefits. Collaboration is essential, with carriers, operators, retailers and other parties working collectively for successful implementation and operation. Innovation and radical solutions are possible, illustrated by the Starship autonomous delivery robots delivering food and parcels on the streets of Milton Keynes.

Innovation in parking management and control are represented with the concept measures of Mobility as a Service (MaaS) parking and enforcing controlled zones using Geo-fencing technologies. MaaS offers adaptable mobility with travel information and payment services across all modes of transport and can influence an individuals' decision prior to journeys being undertaken, based on their preferences and the travel opportunities available. For car users, this could be used to influence their travel timings, routing and provide a parking solution with instant payment based on geo-fenced parking locations, all in real-time. This technology is already in use in the UK, offering user convenience and greater parking compliance, with potential for reduced operational costs for the local authority once operational.

Public Realm and Accessibility
Several conceptual interventions have been identified relating to enhancing the public realm of the urban centres. The concept of a 'multi-user' high-street aims to improve the way in which the public transport services, cyclists and other small wheeled modes such as scooters access and operate within designated pedestrian areas to minimise potential user conflicts and enhance safety, comfort and convenience of all. Reference to exemplar schemes can be used to develop options which would require comprehensive consultation with the community, retailers, businesses and operators to develop consensus for a preferred scheme. A number of project sponsors and funding sources may be required to enable delivery.

A programme delivering enhanced bus shelter and travel information improvements would be a beneficial element alongside public realm and service improvements to reinforce the user perception of bus travel. Innovations in Real Time Information for relying information to passengers at bus stops can aid user confidence, such as GPS beacons on buses relaying live journey times to that stop; combined with other measures to improve bus journey time reliability, the bus network can become an attractive option to just 'turn up and go'. Capital costs can be significant to replace infrastructure across the entire network. A pragmatic approach could involve phasing delivery as part of wider corridor-level programmes identified in the strategy.

Cycling Corridor
These interventions are at concept stage, and no specific designs or alignments have been drawn up. These include the development of new pedestrian Cycle Bridge: providing a link from Creekmoor to Upton Park, and the Ferndown to West Moors Trailway. Coincidently, these interventions also scored the lowest in the appraisal and may be less beneficial than the cycling corridors described earlier. Nevertheless, these interventions would provide benefits to leisure cyclists. Providing a cycling bridge across the A350 reduces the current severance experienced by pedestrians and cyclists and would provide a more direct route to Upton Park. This bridge would require more detailed planning, starting with a feasibility study and securing funding, therefore it could be implemented within the middle of the strategy.

Safety
Enforcing parking around schools is a simple safety measure, which can be combined with other school initiatives phased for short term delivery in the strategy for little additional resource. When combined with a pavement parking ban, lower 20mph speed limits, and activities involving more children making active travel journeys to schools, safety for children is improved with bonus health, social, economic and environmental benefits.

Sustainable Transport Corridors
Two measures identified which could support delivery of the sustainable transport corridors are the removal of on-street parking on bus routes and delivering bus and cycle priority measures on sustainable transport corridors. These are both examples of solutions that have proven to be successful in other areas of the UK and could be delivered quickly. Both interventions compliment the short term interventions, especially the cycling and sustainable transport corridors implemented within the first five years of the strategy, adding to the shift towards sustainable transport. However, experience from other locations have demonstrated the value of detailed planning and design with comprehensive community consultation for widespread acceptance of plans before installation.

Bus
These interventions focus on making bus travel easier and more convenient, and are all interlinked in some way, which will require significant planning. Demand Responsive transport would provide greater flexibility to route public transport into areas which are uneconomic for a scheduled service and therefore improve the connectivity with the local community, especially with the commercial and urban centres. Provision of free bus travel to school children is also a form of demand responsive transport and could be trialled in the medium term after the behaviour change interventions delivered in the short term.

Improving the frequency of services to a 10-minute frequency would also improve connectivity and reliability of the services. This intervention should be considered alongside the Sustainable Transport Corridors; however, it requires commitment from the bus operators and upgrades to infrastructure at bus stops and provision of service information.

These concept interventions have been identified as further measures to support and enhance the bus user experience, but details are not well advanced. Continued support for the South East Dorset Bus Partnership between the councils and local bus operators will involve agreeing additional schemes and funding to deliver improvements to the quality of services and facilities within the scheme area.

An extension of this partnership approach seen in other city region areas of the UK is the move towards a ‘One Bus’ partnership model, as seen in Manchester and emerging in Cornwall. This would involve the bus operators and councils creating an integrated bus network with unified branding, timetables and flexible, simplified fare structures for a seamless integrated passenger experience. The branding would still allow individual operator buses to be identified as part of the partnership. It requires significant investment by all parties but provides a unique opportunity for all to work together to deliver a transformation in the region’s bus network.

Financial
Charging drivers for when and where their vehicle is used can moderate and influence travel behaviours and has been used effectively in the UK and globally. Reviewing parking charges to ensure a common set of scaled charges across South East Dorset has been identified as a means of managing parking demand. Similarly, a congestion charge or dynamic demand-based charging have been used effectively in other UK locations to manage demand and could be applied. Changes to any financial measures can be contentious, therefore robust planning and widespread consultation are essential in developing detailed proposals using the lessons learnt elsewhere; the timescales for establishing a robust evidence base and comprehensive consultation mean the proposals will take some time and so are phased for delivery in the medium term.

Interchange
New interchange hubs for Park and Ride are identified for medium term delivery. These hubs will have a role to play in reducing the numbers of cars in the centres by intercepting trips on the urban fringe and transferring them to bus or other alternative modes. Six park and rides were modelled with indicative 15-minute frequency bus services between the sites and centre of town:

- Creekmoor, Mannings Heath and Wimborne (for Poole)
- Blackwater, Northbourne Roundabout and Bournemouth Airport (for Bournemouth).

Further option development and operational planning will be required to progress these, involving public consultation, identifying operators, securing the sites and gaining planning permissions. It is therefore considered reasonable that these sites could be delivered in the medium term.

Table 7.8: Mobility Strategy Implementation Plan – Medium Term Concept Interventions

Topic	Sub-Topic	Concept Interventions
Travel Demand Management	Alternative modal solutions	Freight Hubs
		MaaS Parking
	Traffic and Parking Management	Enforcing controlled zones using Geo-fencing
Public Realm and Accessibility	Public Realm	Multi-user High Street
		Public transport improvements, including bus shelter and bus information improvements
Cycling Corridor	Leisure cycle route infrastructure	Development of new pedestrian Cycle Bridge: providing a link from Creekmoor to Upton Park.
		Ferndown to West Moors Trailway
Safety	School Safety	Enforcement of parking outside of schools
Sustainable Transport Corridor	Changes to public highway	Removal of on-street parking on key bus routes
		Bus and Cycle priority on main routes
Bus	Improved frequencies accessibility	Demand Responsive Transport
		Improve frequency of buses on main artery routes
	Bus partnerships	Bus/transport partnerships
		One bus franchise
	Improving accessibility	Provision of free bus travel to school children
Financial	Parking Charges	Increase cost in parking
	Charging schemes	Congestion Charging
		Dynamic / demand-based pricing
Interchange	New transport hub	Edge of Town P&R
		Park and Ride

7.5 Long Term (*11-20 years*)

The interventions for long term delivery include some of the most exciting and visible transport projects which reframe mass-transit in South East Dorset with new services, interchange hubs and potentially a light rail system. However, these are among the most challenging to implement, due to scale, complexity, cost or a combination of all factors. Individually these interventions may be transformational, yet their ultimate effectiveness is as part of a cohesive, multi-modal network of mobility and the successful delivery of the earlier phases of the strategy. This allows for changes to travel to be enacted in the South East Dorset area, whilst providing sufficient time for robust feasibility studies and business cases to be prepared and funding secured for these city-region scale projects.

There is fast-paced discourse in the transport sector about a range of possible mobility futures, with a spread of technologies and opportunities being identified and proposed for society and cities, as highlighted in Section 1.3. Some of these futures may feature within the timeframe of this Mobility Strategy, others may not, and the uncertainty this creates is challenging to model and appraise in the present. The interventions within the long term implementation plan are schemes identified and appraised for inclusion (as explained in Section 3.2).

Long term, defined interventions

Interchange
One new and one relocated railway station are identified in the long term. These will improve community and businesses' access to the rail network and respond to changing economic circumstances. New stations are generally expected to be primarily funded locally rather than by central government, and partnerships including Dorset LEP, councils, developers and train operators will need to make a case to project sponsors for funding. Developing a business case will be instrumental in seeking funding. Therefore, whilst ultimate delivery of these elements is suggested for the long term, the creation of project partnership should take place sooner, along with development of the commercial rationale for the business case to enable approaches to sponsors for funding.

Rail
The rail interventions primarily entail enhancing existing services or entirely new services; however, the existing infrastructure does not have the capacity for many of these to be accommodated. In general, Network Rail only funds renewals to the railway infrastructure, with infrastructure enhancements to support service enhancements funded through other sources such as the local infrastructure fund, or on occasion directly from central government. As with new rail stations, a case for funding would need to be made, both for any necessary capital infrastructure enhancements and to support the costs of operating additional services.

New or enhanced services entail considerable planning to deliver, with proposals needing to address network reliance and constraint issues which exist on the network beyond the South East Dorset area. Proposals typically involve a wide partnership including Network Rail, train operators, planning authorities, developers and others. The commercial case will need to address the commercial basis for any enhancement, with patronage and revenue considerations being critical for operators to determine whether services can be commercially viable and/or determine the level of subsidy which may be necessary.

Table 7.9: Mobility Strategy Implementation Plan – Long Term Defined Interventions

Topic	Sub-Topic	Defined Intervention
Interchange	New transport hub	Relocated Poole station that has better, safer accessibility to the town.
		New Railway Station at Talbot Heath to serve the two Universities
Rail	Improved performance of existing services	Improved journey times and increased capacity on the West of England Line.
		More frequent rail service between Poole and Bournemouth
		Reduce journey times on services between Weymouth and London

		Reduced journey time to London: circa 1 hour 45 mins from Poole / 1 hour 30 from Bournemouth
		Direct Train between Poole and Portsmouth
	New services	New journey opportunities from south Dorset to major destinations through the provision of either additional train services or improved interchange at appropriate stations. Journey times should be comparable with road.
		New/ improved journey opportunities from Wool/ Wareham/ Holton Heath to Christchurch/ Bournemouth/ Poole
		New/ improved journey opportunities in areas not served by rail (north Bournemouth/ north Poole/ Ferndown/ Bournemouth Airport/ Verwood/ Wimborne

Long term, concept interventions

Rail

Rapid transit has been identified as a prospective element of an integrated public transport network for the South East Dorset area. Some conceptual assessments have considered potential alignments between Christchurch and Hamworthy and additional routes connecting outer areas such as Ferndown and Wimborne with the main centres of Bournemouth, Poole and key locations such as the airport, major hospitals and the university.

Rapid transit systems are significant capital-intensive infrastructure projects, which by their nature are considered a long-term element for this Mobility Strategy. Feasibility and optioneering studies are required to consider the most suitable potential concepts such as guided bus, tram, tram-train, and intermediate modes such as 'very light rail,' and to consider operational issues including carrying capacity (passengers per direction per hour) and broad unit costs (operating and capital). Other key issues include scheme governance, funding, consent, delivery timescales and risks which would include the maturity of the chosen concept. From this, development of a Strategic Outline Business Case would enable an assessment of the economic, social and environmental benefits, in turn allowing pursuit of funding opportunities for a preferred rapid transit scheme.

Table 7.10: Mobility Strategy Implementation Plan – Long Term Concept Interventions

Topic	Sub-Topic	Concept Intervention
Rail	New Services	Development of Dorset Area Rapid Transit System

7.6 Working with the community

Any form of change can be challenging. This Mobility Strategy has been developed through a consultative process involving engagement and feedback, but this document is only the starting point. The consultation to reach this stage has demonstrated an appetite for transformative change in the South East Dorset area. Working up the interventions in the Mobility Strategy into detailed programmes for implementation will require broader consensus from the public and local stakeholder groups, with community engagement a core activity. Some choices will be easy, others less so, and engagement must enable the community to see how the elements combine over time to deliver positive results. This will require an ongoing process to build and maintain support, broadening knowledge and understanding and keeping people informed of progress as interventions get developed.

7.7 Monitoring and Evaluation

The phased implementation plan set out herein has been modelled at a high level as set out in Section 4 of the report. This has demonstrated the additional network and connectivity benefits that could result from each phase and work package of investment. Some intervention topics, such as cycling corridors, transition from one phase to another, as the network of corridors is enhanced and completed.

However, as the 2020 Covid-19 pandemic has shown, many factors can change and travel demand, choices and network use can significantly change as a result. A level of proportionate monitoring and evaluation is therefore required to ensure that the true outcomes and impacts of each phase of Mobility Strategy implementation are understood and can feed into the content, design and detailed scheduling of subsequent phases.

The monitoring and evaluation should be built on and enhance existing activities, for example any ongoing Local Transport Plan monitoring. Specific monitoring and evaluation will also be ongoing for local major project investment, in line with DfT requirements. These activities should be coordinated and complemented to establish an approach to monitoring and evaluation that enables a top-down review of the Mobility Strategy. In practical terms this would include:

- Identifying the scope and timing of existing/planned monitoring and evaluation activities of relevance to the Mobility Strategy area e.g. those relating to Transforming Cities interventions;
- Develop intervention logic mapping for committed and planned short term Mobility Strategy interventions, to understand anticipated outcomes/impacts and thereby monitoring and evaluation requirements;
- Define evaluation approaches where considered proportionate, to support the exploration of causality and attribution of observed changes i.e. is more data and analysis required to understand the outcomes/impacts of individual interventions and/or the overall Mobility Strategy;
- Identify gaps in monitoring/data availability for the short term Mobility Strategy period, based on the above assessments;
- Define additional monitoring activities to support robust evaluation of Mobility Strategy interventions/investment; and
- The ongoing collation and review of monitoring and evaluation evidence, from both individual interventions and network-level monitoring to determine the effectiveness of Mobility Strategy investment.

Adopting a holistic top-down approach, drawing together evidence from across the study area through time, would support the ongoing review and modification of investment packages. This will help ensure that each additional intervention will complement the transport network and connectivity across the area.

List of Appendices

A. Evidence Review Report

B. Consultation Report

C. Appraisal and List of Interventions

D. Model Report

Annex A – Detailed Area Maps – Do Minimum

Annex B – Highway Model Statistics – All Scenarios

Annex C – Journey Times – All Scenarios

Annex D – Intervention List and Modelling Details

Annex E – Detailed Area Maps – Do Something

Annex F – Detailed Area Maps – Comparison

Annex G –Low Growth Scenario Results

Annex H – High Growth Scenario Results

Annex I – Economic Appraisal for Low and High Growth Scenarios