

A303/A358/A30 Corridor Improvement Programme

Economic Impact Study
January 2019

Devon County Council
County Hall
Topsham Road
Exeter
Devon
EX2 4QD



PREPARED BY

Name: Henry Dixon
Position: Graduate Transport Planner
Date: January 2019

AGREED BY

Name: Hannah Clark
Position: Senior Transport Planner
Date: January 2019

ISSUED BY

Name: Dave Black
Position: Head of Planning, Transportation and Environment
Date: January 2019

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Executive Summary

This report considers the potential economic benefits of delivering an ‘end to end’ improvement to the whole of the A303/A358/A30 corridor. The existing economic climate of the South West region has been considered alongside business survey data in order to monetise the predicted GVA outcomes of implementing a whole route improvement, over a 60 year horizon, and provides a refresh to the Economic Impact Study published in 2013.

The A303/A30 is one of the two main road routes from London to South West England; it is the trunk road corridor between London and Penzance and provides the most direct road link between the southwest peninsula and London and the South East. Despite its strategic importance to the South West region, the route is of poor quality, experiencing considerable congestion and road safety problems, and is seen as an extremely unreliable access point to the South West. As a result, an improvement to the A303/A358/A30 corridor has long been considered a priority by a strong coalition of local authorities.

The need for improvement along the corridor was recognised in the Road Investment Strategy 2019/2020 (RIS1), announced in December 2014. This committed to spending £2bn on three major A303/A358/A30 dualling improvements at Amesbury to Berwick Down (Stonehenge), Sparkford to Ilchester and Taunton to Southfields. These schemes have continued to be developed over recent years and will require approval through the DCO process. As such, an updated indication of the benefit of upgrading the whole route corridor to the South West has been considered necessary.

The South West economy is under-performing compared to the rest of the UK and, without improvement, the performance of the corridor will deteriorate, further limiting growth and prosperity. Businesses view the A303/A358/A30 route as unreliable, with congestion, delays and accidents adding to the perception that the South West is difficult to get to. Productivity in the South West is slightly below the national average, with those businesses along the M4/M5 corridor performing notably better than along the A303/A358/A30. Gross Value Added (GVA) per head along the M5 corridor exceeds not only other parts of the region, but also the UK average. In contrast, the areas served by the A303/A30/A358 all demonstrate GVAs lower than the national average, with productivity decreasing further west. In addition to this, wages are low along the corridor compared to the regional and national average, despite the skilled workforce relative to the UK average.

Despite this, the populations of the corridor’s adjoining authorities have continued to grow, with further growth planned in the future. The existing Local Plans for Wiltshire, North Dorset, South Somerset, Taunton Deane, East Devon and Exeter allocate approximately 100,000 additional new dwellings and 420ha of employment to be delivered in the districts by 2031. 40% of these new dwellings are within 5km of the A303/A358/A30 corridor. Their close proximity to the strategic link of the A303/A30 means the success of these developments will be expected to be influenced most by the future performance of the corridor.

Large future growth is also planned for the wider South West, with large developments planned for the Greater Exeter area, Cornwall, Plymouth and Torbay. If all planned

development comes forward, there will be a large resultant demand, and a high-quality transport network will be required to ensure the region's population and economy can grow. It is vital that the A303/A30 does not act as a barrier to the planned growth in the South West.

As part of this study, levels of delay as a result of incidents occurring on both the M5 and A303 corridors have been monitored. This analysis demonstrates that certain sections on both routes are subject to unreliable travel conditions. Most notably, the consistently worst performing section is on the A303/A30 between Amesbury and Berwick Down, (in the vicinity of Stonehenge), followed by the M5 between Weston-Super-Mare and Bristol. Whilst the M5 incurs incidents of longer delay (i.e. collisions), the A303/A30 incurs a larger quantity of incidents which introduce smaller amounts of delay (i.e. congestion). The resultant level of average delay on each route is similar and similar numbers of incidents on both routes have been observed. In addition to this, there is no reliable trend of when delay occurs, preventing drivers from being able to make an informed route choice before travelling. Drivers to and from the South West therefore do not have a reliable alternative route to the rest of the country. Regular disruption to the rail network further exacerbates these issues, with no reliable alternative mode of travel to the rest of the country.

The 'A303/A358/A30 Corridor Improvement Economic Impact Study', published in 2013, demonstrated a number of benefits to the South West as a result of a whole corridor upgrade, including:

- 21,400 jobs
- £7.2bn employment related economic impacts
- £8.6bn per year increased visitor expenditure
- transport benefits of £1.9bn
- Improved transport resilience

GVA benefits for districts within the South West that are served by the A303/A30/A358 corridor were also calculated, which have been refreshed in this study using updated figures alongside 2012 business surveys results. This finds that an improvement to the whole A303/A30/A358 corridor would result in GVA benefits to the region of almost £40 billion. Somerset and Devon stand to receive the highest GVA benefits of £10.6 billion and £9.8 billion respectively.

This report demonstrates that the South West stands to reap substantial benefits from an end to end improvement to the A303/A30/A358 corridor. Proposed RIS1 improvements, Amesbury to Berwick Down, Sparkford to Ilchester, and the A358 between Taunton and Southfields, as well as single carriageway improvements between Honiton and Southfields, will act as a catalyst to the whole route improvement, ultimately resulting in significant economic benefits to the region.

Whilst the RIS1 improvements are worthy of building in their own right, the full economic benefit for the UK will only be achieved with a full end-to-end improvement along the A303/A358/A30 corridor. As such, a pipeline of schemes for the remaining unimproved sections will need to receive funding allocations in future RIS periods in order to ensure the proven need for a strategic second link to the South West are met.

1. Introduction

1.1. Background

The M3/A303/A30 is one of the two main road routes from London to South West England; it is the trunk road corridor between London and Penzance and provides the most direct road link between the southwest peninsula and London and the South East.

The alternative route is the M5 motorway. With the existing demand along the M4/M5 corridor, the M5 between Taunton and Exeter would not be able to cope with a transfer of traffic from the A303/A30 to the A358/M5 during peak times. In non-peak times, travellers from the south east to the south west would continue to use the shorter route along the A303/A30 corridor. Future traffic on the M5 is anticipated to increase by 45% in 2040. This means that with future growth, the M5 between junction 29 in Exeter and junction 25 on the A358 will be over capacity on more occasions than at present. Hence, both strategic routes are needed for resilience to connect the South East with the South West.

The A358 between the M5 at Taunton and Southfields roundabout is a critical route for north-south trips between Taunton, northern Somerset and northern Devon. The A30 and A358 routes complement each other, serving different, but equally vital, needs.

In April 2013, in order to raise the profile of the poor quality of the existing route, a consortium of local authorities submitted “The A303 Corridor Improvement Programme Outline Economic Case and Proposed Next Steps” to government. The report identified the need for a dual carriageway improvement to the A303/A358, plus further single carriageway improvements to the section of A303/A30 between Southfields and Honiton.

In ‘Investing in Britain’s Future’ published in June 2013, the Chief Secretary to the Treasury announced a feasibility study to look at problems on the A303 and to identify potential solutions. As a consequence, the government commissioned the ‘A303/A358/A30 Corridor Feasibility Study’, which aimed to identify a potential programme of improvements. The findings were published in February 2015.

Prior to the publication of the corridor study, in December 2014, the government published the Road Investment Strategy 2015/16-2019/20 (RIS 1). This outlines the investment in the Strategic Road Network during the first roads period and proposes investing £15.2bn in over 100 major schemes. It commits to spending £2bn on three major A303/A358/A30 dualling improvements at Amesbury to Berwick Down (Stonehenge), Sparkford to Ilchester and Taunton to Southfields. A map of these improvements, as well as the other single carriageway improvements program between Honiton and Southfields discussed below, is below in Figure 1-1. A programme of 8 improvement schemes in total has been identified, as outlined in ‘Creating an Expressway to the South West, The Case for the A303/A358 Corridor’. This intends to create a high-quality dual carriageway link between London and the South East and the South West.

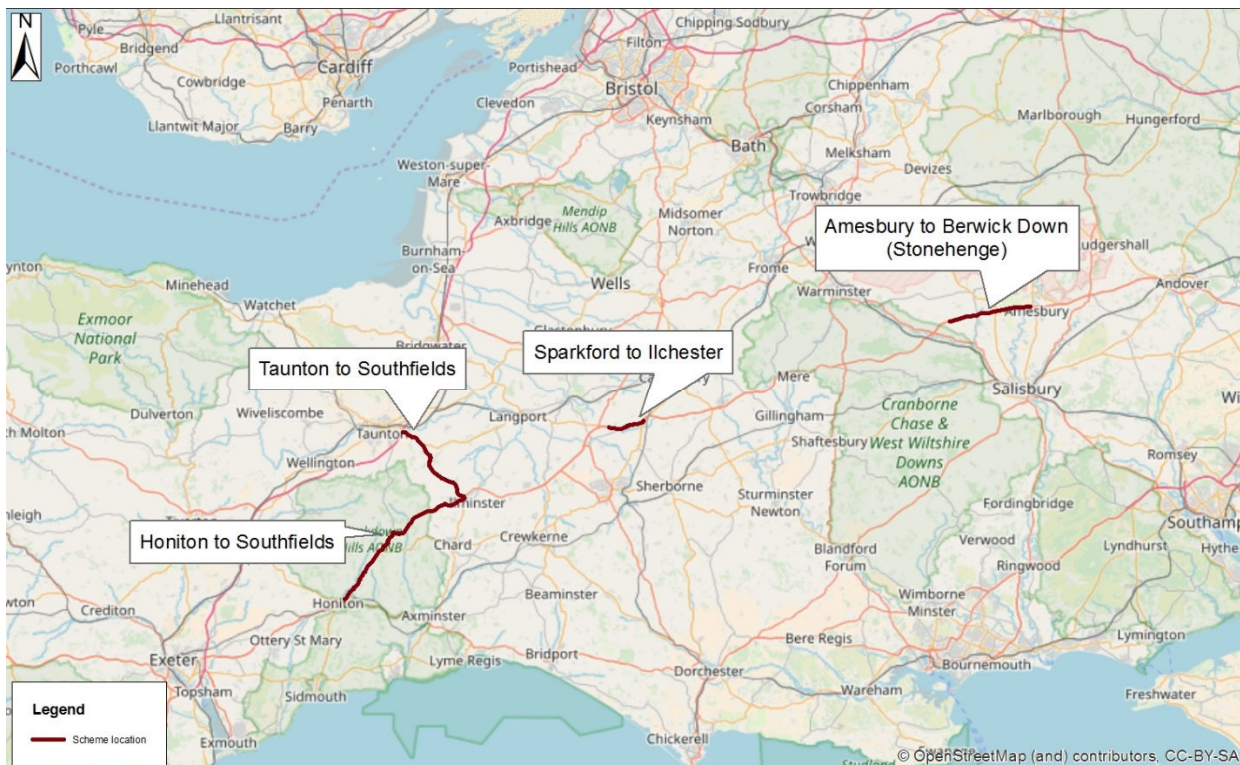


Figure 1-1: A303/A358/A30 Corridor Improvement Programme scheme locations.

The RIS1 announcement also commits to setting aside funding for ‘smaller scale improvements’ to the single carriageway A303/A30 between Honiton and Southfields ‘to improve safety and journey quality for road users recognising that large scale improvements would be challenging given the protected landscape and topography surrounding the route. This includes some small-scale work in the Blackdown Hills Area of Outstanding Natural Beauty (AONB) which will take account of the environmental sensitivity of the area’. A scheme was progressed by Devon County Council, with a Business Case submitted to the Department for Transport in April 2017.

Consultations for the first 3 schemes were held in early 2018. The schemes are now approaching the next stage of the planning process, with submission of Development Consent Orders to the Planning Inspectorate expected in late 2018.

1.2. Study Objective

The aim of this report is to provide a base of wider economic impacts evidence in support of the development of the A303/A358/A30 corridor improvement programme. Economic benefits previously calculated in ‘The A303/A358/A30 Corridor Improvement Economic Impact Study’ have been updated and refreshed, and will be supplied to the Planning Inspectorate in support of the proposed schemes.

The wider economic impacts focus on the analysis and quantification of regional Gross Value Added (GVA) impacts for the South West. This measures the total contribution to the economy of each individual producer, industry, or sector to the area in question. GVA is a recognised measure of economic activity at a regional level, and as such it provides a useful, widely understood, and consistent measure of how the scheme will benefit the overall economy of the South West.

In addition, evidence has been gathered into the performance of the A303/A358/A30 corridor compared to the M5 corridor. Evidence regarding incidents on both corridors has been analysed, enabling a direct comparison into the level of delay experienced on each corridor. This evidence also indicates where investment would be best focused, highlighting where the worst performing sections are located.

1.3. Structure of the Report

This report firstly illustrates the importance of the A303/A358/A30 corridor to the South West. The following chapter focuses on the existing performance of the route by analysing the occurrence of incidents on the corridor compared to the M5 corridor. The regional benefits are then explored, updating GVA analysis previously undertaken in 2012. The report is therefore set out as follows:

- Chapter 2 – The A303/A358/A30 Corridor: A Key Corridor to the South West
- Chapter 3 – Route Performance
- Chapter 4 – Regional Benefits
- Chapter 5 – Conclusion

2. The A303/A358/A30: A Key Corridor to the South West

This chapter sets out the context of the importance of the A303/A358/A30 corridor to the South West study area. The chapter considers the routes status with respect to the region's economy, policy and planning. It draws on economic data from various sources, including the National Online Manpower Information System (NOMIS) and the UK Treasury, as well as previous reports which have been produced about the A303 corridor. NOMIS provides official and up to date labour market statistics from the Office for National Statistics (ONS).

2.1. National Policy

In addition to the route specific documents produced since 2013, a number of national policy documents have been published which further highlight the relevance of the corridor improvements to national strategies and priorities.

2.1.1. National Policy Statement for National Networks

The A303/A358/A30 corridor is part of the Strategic Road Network (SRN). The National Policy Statement for National Networks (NPS) sets out the need for, and government's policies to, deliver development of nationally significant infrastructure projects (NSIPS) on the national road and rail networks in England. The NPS also sets out the government's vision and strategic objectives for the national networks, which is:

'The government will deliver national networks that meet the country's long-term needs; supporting a prosperous and competitive economy and improving overall quality of life, as part of a wider transport system. This means:

- Networks with the capacity and connectivity and resilience to support national and local economic activity and facilitate growth and create jobs.
- Networks which support and improve journey quality, reliability and safety.
- Networks which support the delivery of environmental goals and the move to a low carbon economy.
- Networks which join up our communities and link effectively to each other.'

In Chapter 2 of the NPS, the need for development of the national road network and, in particular, the government's policy for addressing need is explained. In paragraph 2.22, it states:

'Without improving the road network, including its performance, it will be difficult to support further economic development, employment and housing and this will impede economic growth and reduce people's quality of life'.

2.1.2. Transport Investment Strategy – Moving Britain Ahead

The Department for Transport's 'Transport Investment Strategy' was published in July 2017, setting out the case for long-term investment in transport infrastructure. This will result in funding being targeted at projects that help rebalance the economy, and

identifies the need for an integrated network to connect communities to drive growth across the whole country, taking account of spending between different regions.

This is in accordance with the Government's plan for Britain for a stronger, fairer country with an economy that works for everyone, in which wealth and opportunity are spread across the country, ensuring success in the long term.

Four key goals of the strategy are:

- 'Create a more reliable, less congested and better-connected transport network that works for the users who rely on it';
- 'Built a stronger, more balanced economy by enhancing productivity and responding to local growth priorities';
- 'Enhance our global competitiveness by making Britain a more attractive place to trade and invest'; and
- 'Support the creation of new housing'.

Delivery of these goals will further the government's Industrial Strategy, the objective of which is *'to improve living standards and economic growth by increasing productivity and driving growth across the whole country'*. They will also meet the objectives of the Housing White Paper which recognises that *'transport infrastructure is one of the keys to unlocking development and delivering places people want to live'*.

In the document, national productivity is identified as lagging behind other countries and it is recognised that prosperity hasn't been shared evenly between different places, leading to disparity as some communities are left behind.

Furthermore, the national network is recognised as ageing and facing increasing demands, creating delays and undermining reliability. In places, this means the connections people and businesses need are not provided. The 'Transport Investment Strategy' therefore aims to improve productivity and connectivity of towns and cities across the country by tackling bottlenecks and traffic jams for road users, such as those currently experienced on the A303/A358/A30 corridor.

2.1.3. Industrial Strategy – Building a Britain fit for the future

In 2017, the government published the Industrial Strategy – a national policy framework against which major public and private investments can be made with confidence. It is built upon a vision to 'create an economy that boosts productivity and earning power throughout the UK'. This vision for a transformed economy relies on 5 foundations of productivity:

- **Ideas** – the world's most innovative economy
- **People** – good jobs and greater earning power for all
- **Infrastructure** – a major upgrade to the UK's infrastructure
- **Business Environment** – the best place to start and grow a business
- **Places** – prosperous communities across the UK

Within the document, Britain's productivity is identified as lagging behind that of competitors, with output per hour having weakened since the financial crisis. Many places are not realising their full potential, with the UK having greater disparities in regional productivity than other European countries. It is recognised that unless productivity improves whilst maintaining high levels of employment, the living standards and quality of life for all citizens cannot be raised.

2.1.4. Rebalancing Toolkit

In 2017, the government's 'Industrial Strategy; white paper' set out its ambition to rebalance the economy and drive growth across the country. In July 2017, the 'Transport Investment Strategy' was published setting out the objectives and priorities for investment as described above. It also committed to developing a new assessment standard to better consider rebalancing impacts in transport business cases, aiming to ensure rebalancing is considered more consistently within decision-making by improving the focus, quality and transparency of rebalancing evidence presented.

The rebalancing toolkit is designed to help authors of strategic cases assess how a programme or project fits with the objective of spreading growth across the country, and introduces a framework for presenting the rebalancing case more consistently.

The importance of underpinning strategic arguments with evidence is highlighted. Potential sources of evidence are given including:

- Descriptions of the affected area,
- GVA per head relative to UK average,
- ONS deprivation indices,
- Employment/unemployment rates relative to UK average,
- Income per head relative to UK average,
- Regional balance in terms of key employment centres,
- Sectoral make-up or share of high value jobs across sectors,
- Poverty metric/income distribution,
- Living costs/challenges such as house prices,
- Differences in access to services/employment/freight and how this influences economic performance,
- Analysis of future demand and capacity constraints,
- Congestion, connectivity, capacity and reliability impacts that impact on the economy,

- Analysis of the potential wider economic impacts in the local area or region – including on GDP and employment,
- Summary of local views and stakeholder engagement,
- Description/evidence of how the project helps boost national productivity, enhance international competitiveness or help support the creation of housing.

This study utilises some of the metrics suggested by the rebalancing toolkit to illustrate the potential benefits of the A303/A358/A30 improvements.

2.2. Local Policy

Investment in the A303/A358/A30 corridor is recognised in a range of local policy documents.

2.2.1. Heart of the South West Local Enterprise Partnership (HotSWLEP) Strategic Economic Plan (SEP)

The A303 corridor is defined as a Functional Activity Zone within the HotSWLEP SEP, published in 2014. This is shown below in Figure 2-1

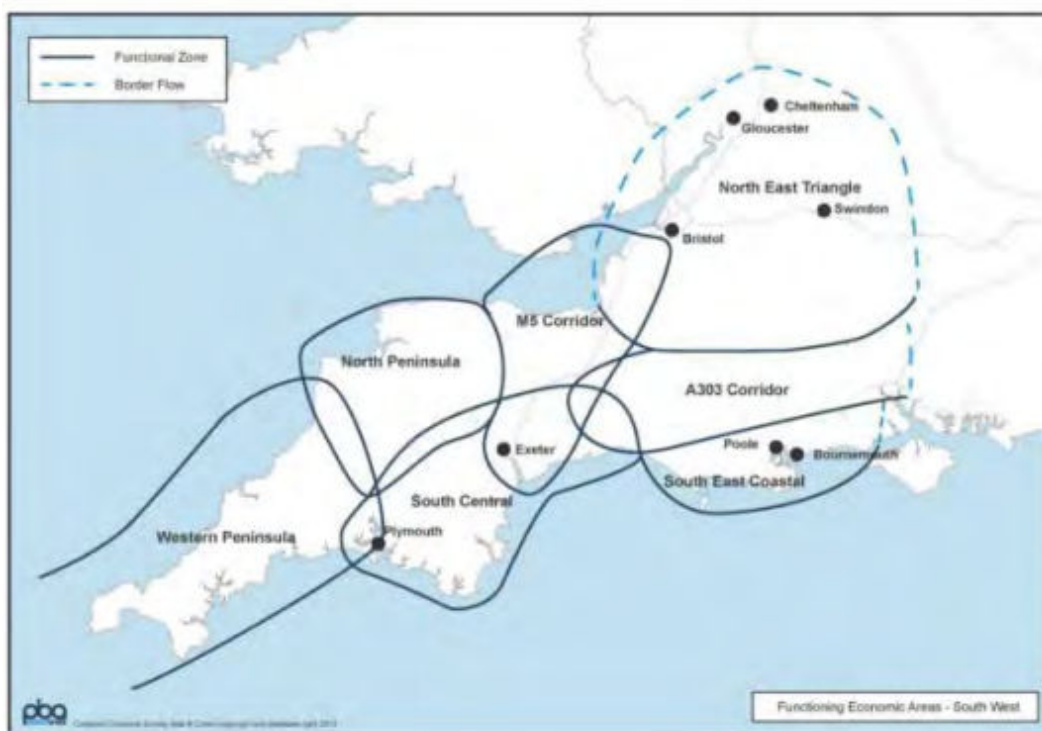


Figure 2-1: South West Functional Activity Zones (PBA, 2013)

The A303 corridor is not a particularly distinct or economically coherent zone in its own right, with its defining features being the A303 and activity in key market towns along the route. Employment in the knowledge economy is higher in the east of the zone than in the west. Some priority sectors in the zone include advanced engineering, food and drink, biotechnology and environmental technology. Advanced manufacturing, primary industries and traditional manufacturing also stand out as key sectors in the zone.

The study area covers a number of different counties, and as such there is not one single set of data which can be used. The data in the sections which follow covers the counties of Somerset, Wiltshire, Devon, Dorset and Cornwall, as these are all relevant to the corridor. Although the A303/A358/A30 does not pass through Cornwall, and only passes through a small part of Dorset, it is important for accessibility and connectivity to and from these counties.

2.2.2. Greater Connected: Transforming Strategic Connectivity in South West England

An independent, business-led report, endorsed by the CBI and five LEPs in South West England (Cornwall & Isles of Scilly, Dorset, Heart of the South West, Swindon and Wiltshire, West of England) was prepared to complement the existing connectivity priorities in each of the LEPs Strategic Economic Plans. It was prepared to strengthen the case for investment in projects that will drive growth and job creation across the whole area.

Four specific recommendations were made, one of which was 'east/west and north/south trunk roads fit for a 21st century economy' through, amongst other interventions, dualling the whole length of the A303/A358/A30.

The report identifies that other than the M4/M5 strategic link, the major arterial routes into the South West lack capacity, with much of the A303/A358/A30 road still single carriageway with steep inclines and not suited to heavy HGV use. It states that the lack of dual carriageway on the A303, A30 and A358 causes serious issues for coping with existing traffic demands and that the aged design on the single carriageway roads, with their steep gradients and sharp bends, contribute to longer journey times.

2.3. Development Plans

Highways England's 'Creating an Expressway to the South West: The Case for the A303/A358 Corridor' recognises that the South West economy is under-performing compared to the rest of the UK and that, without improvement, the performance of the corridor will deteriorate, further limiting growth and prosperity.

The corridor has been a physical deterrent to economic growth with businesses viewing the route as unreliable. Congestion, delays and an increased risk of accidents on the single carriageway sections are preventing businesses from reaching their potential, hampering quality of life in communities nearby and adding to the perception that the South West is difficult to get to, which is damaging for a region that relies heavily on tourism. This is further evidenced by the fact that, despite population growing in the South West faster than the UK average, productivity is below the national average and declines further west, with business productivity along the M4/M5 corridor is notably better than along the A303/A358/A30.

Despite this, the populations of the corridor's adjoining authorities (Wiltshire, Dorset, Somerset, Devon, and Cornwall) have continued to grow. Growth in Exeter has been particularly high, with the city's population growing at 3 times the national average since 2011. Much of this growth has been possible due to significant investment in infrastructure.

Further growth is planned in the future, as detailed in the relevant Local Plans, and the performance of the corridor will continue to be a key driver in the economic success of

these developments. The existing Local Plans along the corridor are detailed below in Table 2-1.

<i>Local Authority</i>	<i>Timescale</i>
<i>Wiltshire</i>	2026
<i>North Dorset</i>	2031
<i>South Somerset</i>	2028
<i>Taunton Deane</i>	2028
<i>East Devon</i>	2031
<i>Exeter</i>	2026

Table 2-1: A303/A358/A30 Corridor Local Plans.

Development totals have been obtained from the Local Plans, as shown in Table 2-2. It is expected that approximately 100,000 new dwellings and 420 hectares of employment will be delivered in the districts adjoining the A303 in the next two decades.

Specific developments that are located within 5km of the A303/A358/A30 corridor have been identified. These are expected to benefit most from the improvements to the corridor and total approximately 40,000 dwellings and 180 hectares of employment.

<i>Local Authority</i>	<i>Districts adjoining A303/A358/A30</i>		<i>Within 5km of A303/A358/A30</i>	
	<i>Dwellings</i>	<i>Employment (ha)</i>	<i>Dwellings</i>	<i>Employment (ha)</i>
<i>Wiltshire</i>	42,000	183.8	3,070	20
<i>North Dorset</i>	5,760	26.3	0	0
<i>South Somerset</i>	15,950	53	3,389	30.8
<i>Taunton Deane</i>	5,414	27.6	4,694	20.8
<i>East Devon</i>	18,281	91.4	16,920	70
<i>Exeter</i>	12,000	40	12,000	40
<i>Total</i>	99,405	422.1	40,073	181.6

Table 2-2: Development totals from Local Plans.

Large future population growth is also planned for the wider South West. In particular, large developments are planned for the Greater Exeter area of East Devon, Exeter, Mid Devon and Teignbridge, with much of this concentrated in eastern parts of Exeter and at the new community of Cranbrook – immediately adjacent to the A30. Future growth opportunities have been focussed on the western end of the A30 corridor where there is capacity on the links and junctions.

Growth aspirations for the Greater Exeter area as a whole for the next 20 years or so suggest around 30,000 houses being built in addition to those allocated in the existing Local Plans.

Growth in the South West is not only limited to Greater Exeter, with significant housing planned for Cornwall, Plymouth and Torbay. Figure 2-2 below shows the expected growth figures for the South West Peninsular.

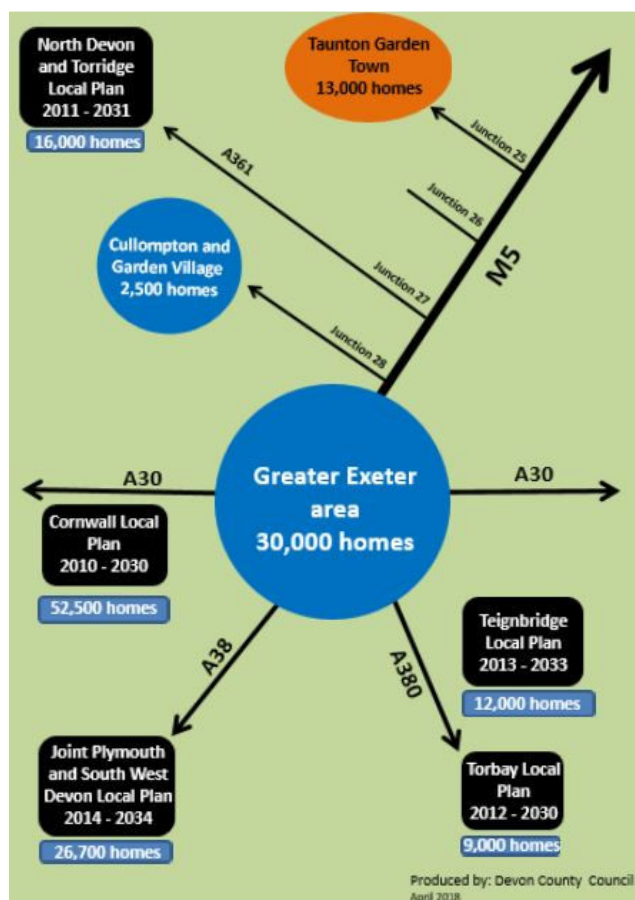


Figure 2-2: Planned Growth in the Wider South West

If all planned development comes forward, there will be large resultant demand, with projections suggesting travel could increase by 40% up to 2040. For the region's population and economy to grow, a high-quality transport network is required.

The A303/A30 currently acts as a barrier to growth in the South West; a region where wages are below the national average and unemployment remains a persistent problem in some areas and in some groups. The HotSWLEP recognises the poor resilience of the transport infrastructure as damaging to the economy, with chokepoints in the strategic network such as the single carriageway A30 blocking growth opportunities.

2.4. Employment

The Labour Force Survey (2017) shows that, of the 3.47m people aged 16-64 in the South West, 81.8% are economically active. The economic activity and employment rates have remained relatively stable over the last two years, with no change in unemployment (3.7% in Sep - Nov 2016 and 3.7% in Oct - Dec 2017). This is slightly better performance than the UK average, which shows an economic activity rate of 78.7% and an unemployment rate of 4.4%.

Figure 2-3 shows the average salary earned by the counties across the South West for 2010 to 2017. In 2017 the average salary in the South West was £32,349, lower than

the UK average of £35,423. For all the counties in the study area (except Wiltshire, whose geography enables access to both the A303 and M4 corridor) average salaries are below the South West average, ranging from a low of £29,837 in Devon to £34,907 in Wiltshire (NOMIS, 2017).

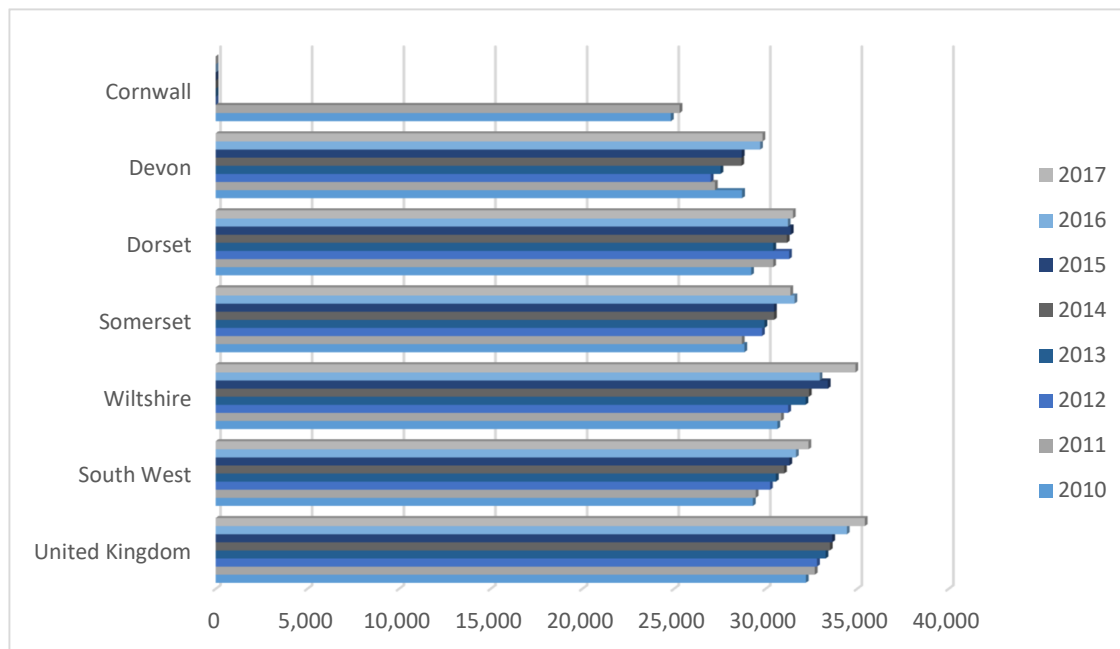


Figure 2-3: Average annual wages in the South West by County (NOMIS, 2017)

Skill levels in the South West are generally better than the UK average. The South West has fewer people with no qualifications than the UK average, and generally has higher levels of people at each skill level, as shown in Table 2-3. However, social mobility is worse further west. For instance, fewer people go onto Higher Education than the UK average in 6 of the 8 Devon districts.

Level	UK average	South West average
<i>No qualifications</i>	8.3%	5.1%
<i>NFQ Level 2 and above</i>	15.9%	17.1%
<i>NFQ Level 3 and above</i>	17.1%	19.9%
<i>NFQ Level 4 and above</i>	38.0%	37.8%

Table 2-3: Level of qualifications in South West for population ages 16-64 compared to the UK average (NOMIS, 2016)

Projected growth in jobs and workforce across the study area are identified below in Figure 2-4 and Figure 2-5. The graphs identify that both jobs and workforce figures are expected to increase generally year-on-year across the 'A303 Corridor'. Relative to the figures for 2018, all 5 counties are forecast to experience very similar rates of growth in available jobs, the lowest being Devon and Cornwall at 9.58% by 2048 and the highest being Dorset at 9.66% by 2048. However, there is more variation in the number of workers, with Wiltshire being the lowest at 7.36% and Cornwall being the highest at 12.68%, both across the same time period. The relative change for each year is detailed in Table 2-4 and Table 2-5. This is below forecast population growth trends for the South West, provided in Table 2-6 up to 2038.

Whilst some counties will experience a greater percentage growth in workers than jobs, all counties in the 'A303 Corridor' will continue to have a dearth of workers compared to jobs. This means there will likely be an increasing demand for commuters to fill the available jobs, placing increased demand on the primary access route to the 'A303 Corridor' counties, i.e. the A303/A358/A30.

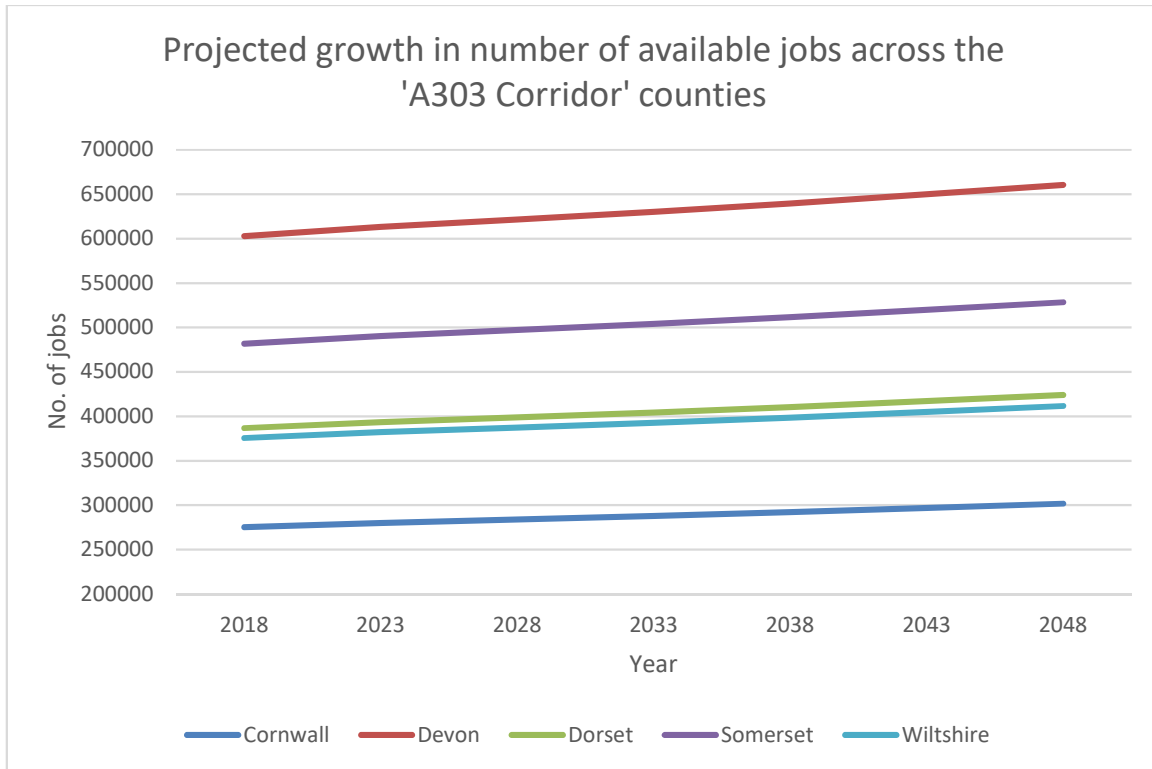


Figure 2-4: Projected growth in number of available jobs across the 'A303 Corridor' counties (TEMPro 7.2, 2018).

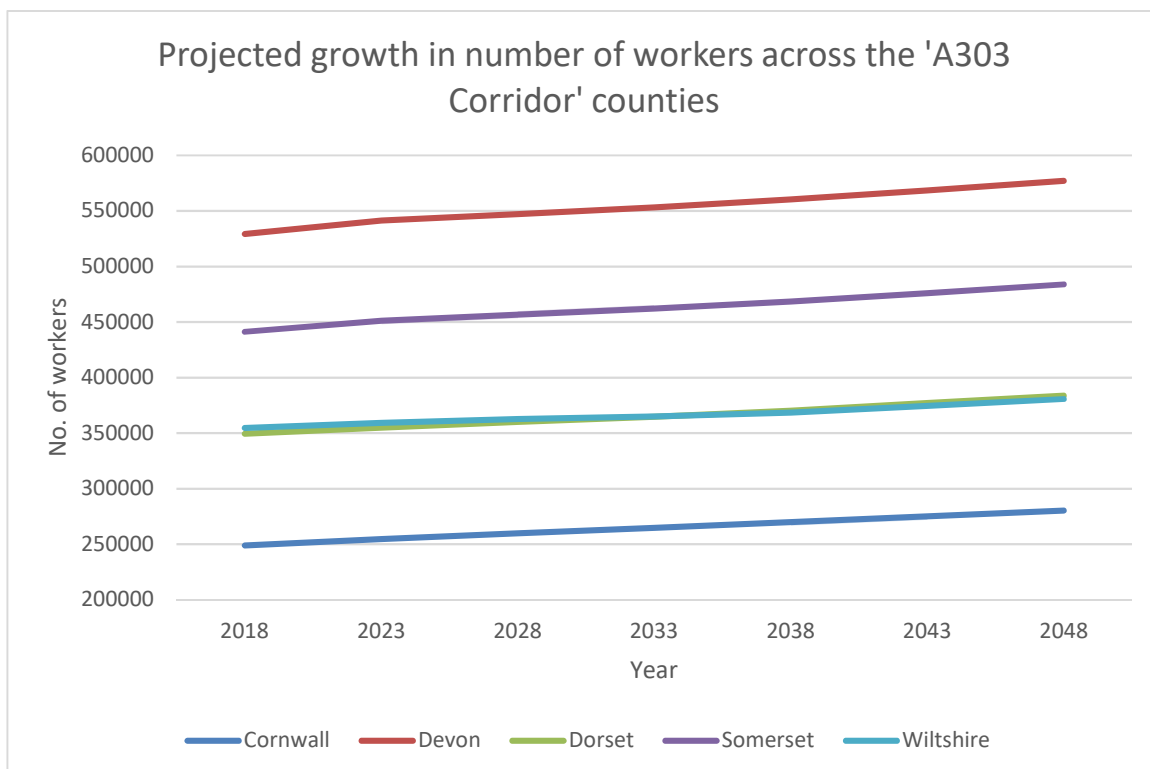


Figure 2-5: Projected growth in number of workers across the 'A303 Corridor' counties (TEMPro 7.2, 2018).

County	2018	2023	2028	2033	2038	2043	2048
<i>Cornwall</i>	0.00%	1.73%	3.13%	4.52%	6.10%	7.81%	9.58%
<i>Devon</i>	0.00%	1.72%	3.13%	4.52%	6.10%	7.81%	9.58%
<i>Dorset</i>	0.00%	1.76%	3.17%	4.56%	6.14%	7.84%	9.61%
<i>Somerset</i>	0.00%	1.80%	3.21%	4.60%	6.18%	7.89%	9.66%
<i>Wiltshire</i>	0.00%	1.75%	3.15%	4.54%	6.12%	7.83%	9.60%

Table 2-4: Change in number of available jobs, relative to 2018 values (TEMPro 7.2, 2018).

County	2018	2023	2028	2033	2038	2043	2048
<i>Cornwall</i>	0.00%	2.36%	4.39%	6.41%	8.51%	10.60%	12.68%
<i>Devon</i>	0.00%	2.28%	3.40%	4.51%	5.86%	7.40%	9.04%
<i>Dorset</i>	0.00%	1.62%	3.07%	4.43%	5.99%	7.95%	9.86%
<i>Somerset</i>	0.00%	2.28%	3.48%	4.70%	6.19%	7.88%	9.66%
<i>Wiltshire</i>	0.00%	1.28%	2.27%	2.91%	3.92%	5.61%	7.36%

Table 2-5: Change in number of workers, relative to 2018 values (TEMPro 7.2, 2018)

Type	2018	2023	2028	2033	2038
<i>Population</i>	5,592,400	5,777,700	5,946,400	6,090,500	6,212,500
<i>Change relative to 2018 values</i>	0.00%	3.31%	6.33%	8.91%	11.09%

Table 2-6: Population growth across the South West region (ONS, 2018).

2.5. Economic Context

The remainder of this chapter provides the economic context for the South West region, which is much wider than the immediate study area. In the economic modelling, a distinction is made between areas in close proximity to the corridor or which are heavily dependent on it and will therefore receive large benefits from the scheme, and those which are further away and will realise a lower level of quantifiable benefit.

The South West economy performs as well or better than most parts of the UK, but lags behind some 'leaders'. In some ways it is like the greater South East, but in others it is more in line with more peripheral UK areas. The South West economy is good at creating jobs, but the workforce is less productive than it could be and the HotSWLEP SEP (2014) notes that the key employment sectors underperform against national averages for those sectors. The transport oriented aims of the HotSWLEP SEP are outlined below in Figure 2-6.

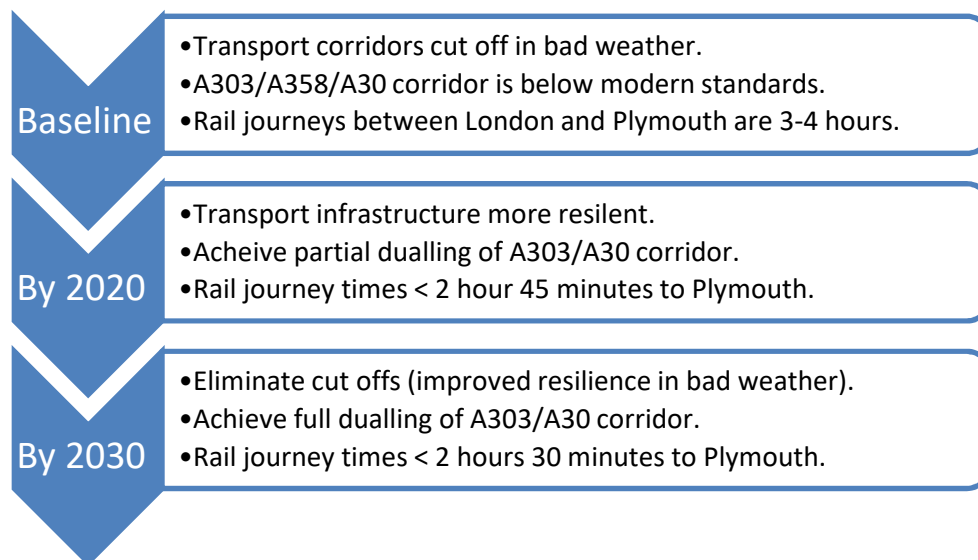


Figure 2-6: Outcomes for the transport oriented aims in the HotSWLEP SEP (HotSWLEP, 2014)

Over the past 5 years, there has been relatively strong economic growth in the South West, accompanied by population growth. The South West population has increased from 5.3m people in 2011 to 5.5m in 2016 (ONS, 2018). This is an increase of almost 220,000 people over the 5 years (an average of approximately 44,000 per year).

Other economic data includes the data compiled by the South West Observatory (SWO) in their publication "The Changing State of the South West 2012" shows that there are considerable differences in economic activity and performance by area within the region.

As an example, Gross Value Added (GVA) per head data for 2015 (ONS, 2018) indicates considerable variations across the region. Bristol and Swindon (both in the 'M4 corridor') have relatively high GVA per head totals that are significantly above, not only other parts of the region, but also the UK average. By contrast, GVA per head is significantly lower in the counties and areas served by the A303/A30/A358 with Wiltshire, Somerset, Cornwall, Plymouth, Torbay, and Devon all demonstrating totals lower than the national average. The GVA per head statistics are included below in Table 2-7.

UK Average GVA per head			
£25,878			
'M4 Corridor' GVA per head		'A303 Corridor' GVA per head	
Bristol	£30,426	Wiltshire	£21,510
Swindon	£30,302	Devon	£20,051
		- East Devon	£16,663
		- Rest of Devon	£20,799
Bath and North East Somerset, North South Gloucestershire	£26,692	Somerset	£19,639
		- South Somerset	£20,111
		- Rest of Somerset	£19,434
Gloucestershire	£25,534	Plymouth	£18,842
		Cornwall & Isles of Scilly	£16,534
		Torbay	£14,915

Table 2-7: GVA per head statistics for the 'M4 Corridor' and 'A303 Corridor' in descending order, 2015 (Balanced approach) (ONS, 2018).

3. Route Performance

3.1. Introduction

As previously mentioned, the A303/A358/A30 corridor has been a physical deterrent to economic growth with congestion, delays, and an increased risk of accidents on the single carriageway sections preventing businesses from reaching their potential, hampering the quality of life in communities nearby, and adding to the perception that the South West is difficult to get to. The performance of the corridor will continue to be a key driver in the economic success of businesses and developments.

This section of the report will focus on the performance and level of operation of the route, primarily through a bespoke analysis tool developed to process and analyse Rich Site Summary (RSS) feed information published by Highways England (HE).

3.2. RSS Feed & Analysis Tool

HE publishes regional RSS feeds of unplanned events across all roads operated by them¹. The RSS feed entries contain a range of information for every event that occurs throughout the relevant road networks, with events usually being published within minutes of their occurrence. These RSS feed publications for the South West have been collected almost continually since 12/03/2018, with a table of dates between which data is available at the time of writing this report included below as Table 3-1. An ongoing analysis of the feed entries has been performed to appraise the level of operation of the route.

<i>Interval start</i>	<i>Interval end</i>	<i>Month Classification</i>
12/03/2018	04/07/2018	Neutral
20/07/2018	02/08/2018	Summer/Non-neutral
04/08/2018	17/08/2018	Summer/Non-neutral
28/08/2018	19/09/2018	Neutral

Table 3-1: Dates of RSS feed collection

3.3. Methodology

The process for analysing the collected RSS feed entries is as follows:

- Collecting ATC data from WebTRIS along routes to produce a typical daily traffic profile for each day of June and August, chosen to represent a neutral and summer/non-neutral month, and a typical monthly traffic profile for each month of

¹ HE's Unplanned Events RSS feed for the South West: <http://m.highwaysengland.co.uk/feeds/rss/UnplannedEvents/South%20West.xml>

the year. The monthly profiles are scaled to match the cumulative total of the typical daily profiles for consistency.

- Analysing and drawing information from each RSS feed entry to determine; the incident’s location and the route it is located on; whether delay is predicted to be introduced to the network by the incident and the duration of the delay; whether lane closures have occurred and which lanes are affected; predicted time for the incident to clear; predicted time for the return to normal traffic conditions; the type of incident occurring.
- Dividing each route in to sections, starting and ending at certain junctions or landmarks. The sections chosen are detailed below in Figure 3-1. Route segments are sequenced with Exeter as their starting point.

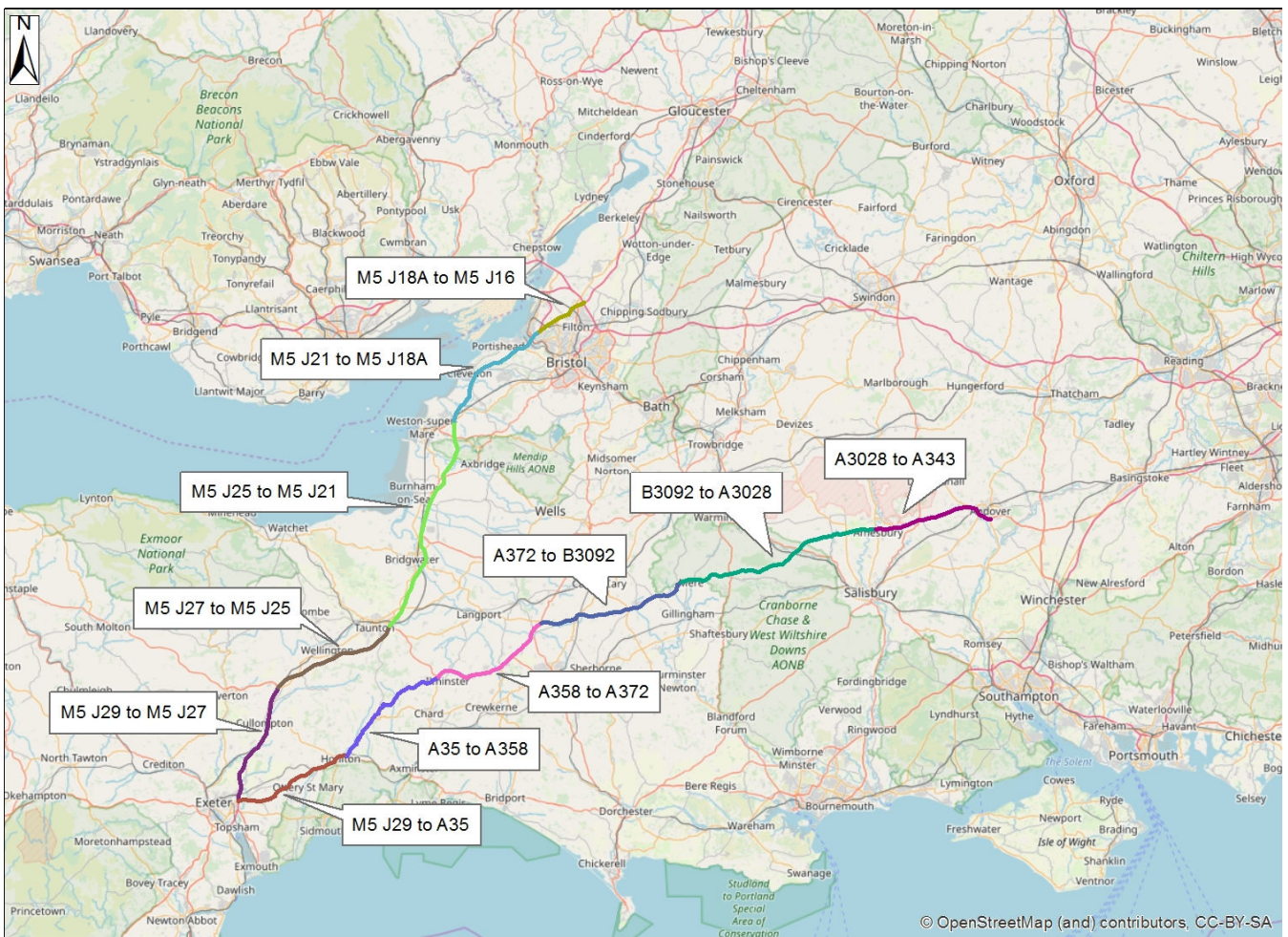


Figure 3-1: RSS Tool route segmentation.

- Using the information drawn from the RSS feed, average incident delay per hour (in minutes) has been calculated for the route segments detailed above. The delay has then been mapped and colour coded by relative severity to highlight the differing performance of route segments comparative to other segments of their route.

The results can be used to assess the overall performance of the A303/A30 and M5 road networks, and to look at areas of these networks that are underperforming compared to the rest of the route, locating bottlenecks and highly congested sections.

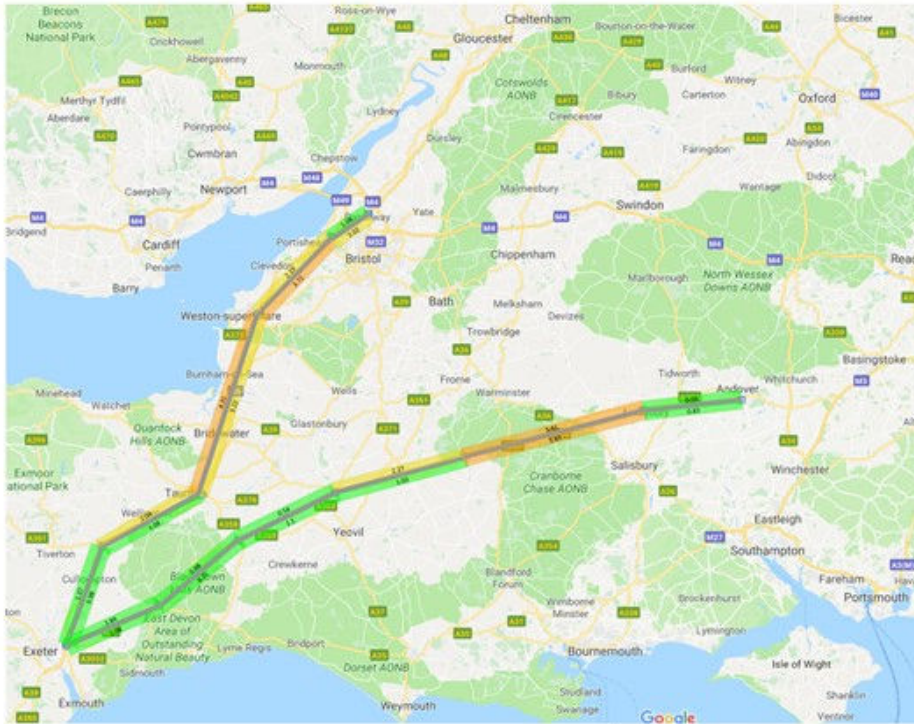
3.4. Results

The RSS tool has been run for a total of 15 scenarios, comprising each combination of time period (24-hour, 12-hour, AM, IP, PM) and month type (All, Neutral, Summer), utilising all available data between the dates 12/03/2018 and 19/09/2018. The figures display the average incident delay per hour.

The model output covering 12-hour period hours, separating those in neutral and summer months, for which data is available is shown in Figure 3-2. Route segments are colour-coded according to the severity of average incident delay.

In addition, the time of occurrence and level of delay introduced by each incident over all the available data (i.e. 24-hour) has been analysed for each route. The trendline of level of average incident delay and the 85th percentile have then been calculated and plotted, and the total number of data points in each graph (i.e. the number of incidents) has been recorded. These are also shown overleaf in Figure 3-3 and Figure 3-4.

12-hour – Neutral Months



12-hour – Summer Months



Figure 3-2: RSS tool output for average incident delay per hour (Mins), 12-hour period (07:00 – 19:00), for each month type separately.

Time of incident vs. Delay introduced (A303/A30 route(s))

Total points:
5770

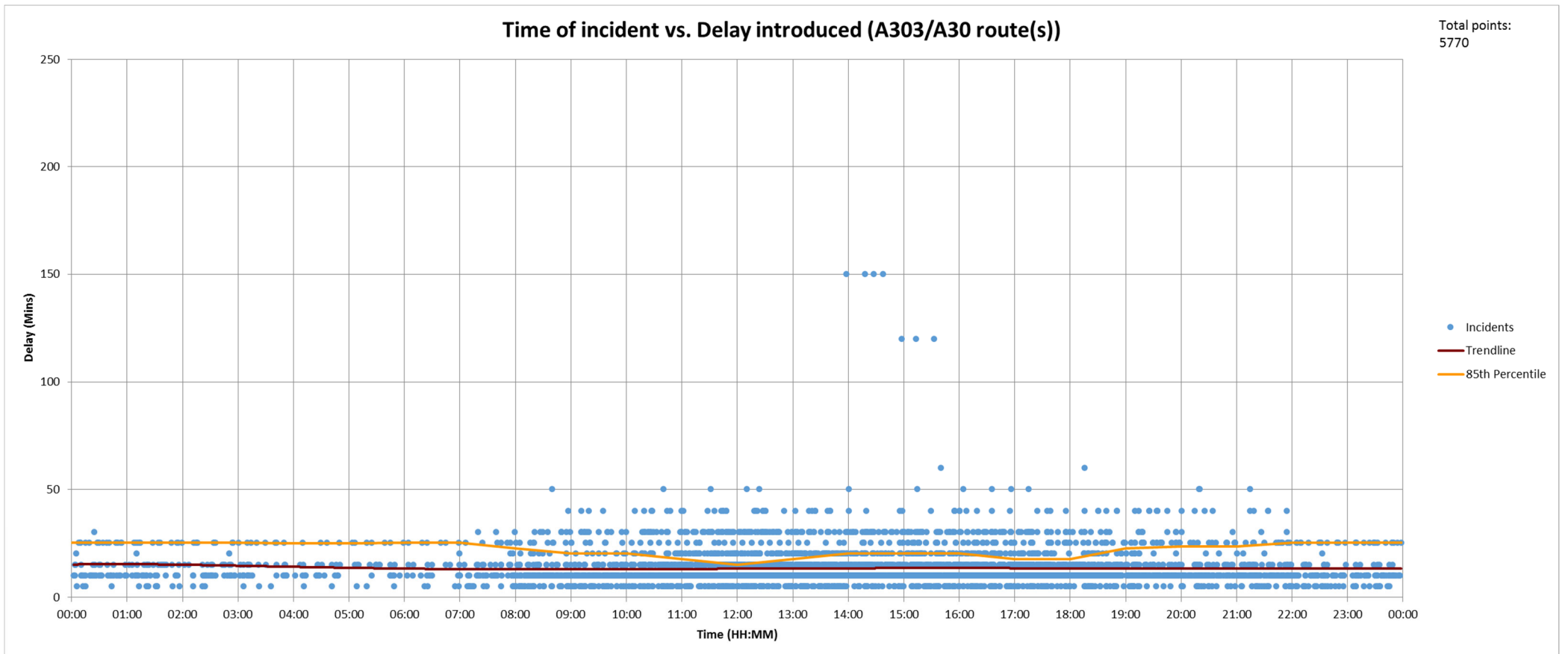


Figure 3-3: Graph of Time of incident vs. Delay introduced for the A303/A30 route, 24-hour data for all month types.

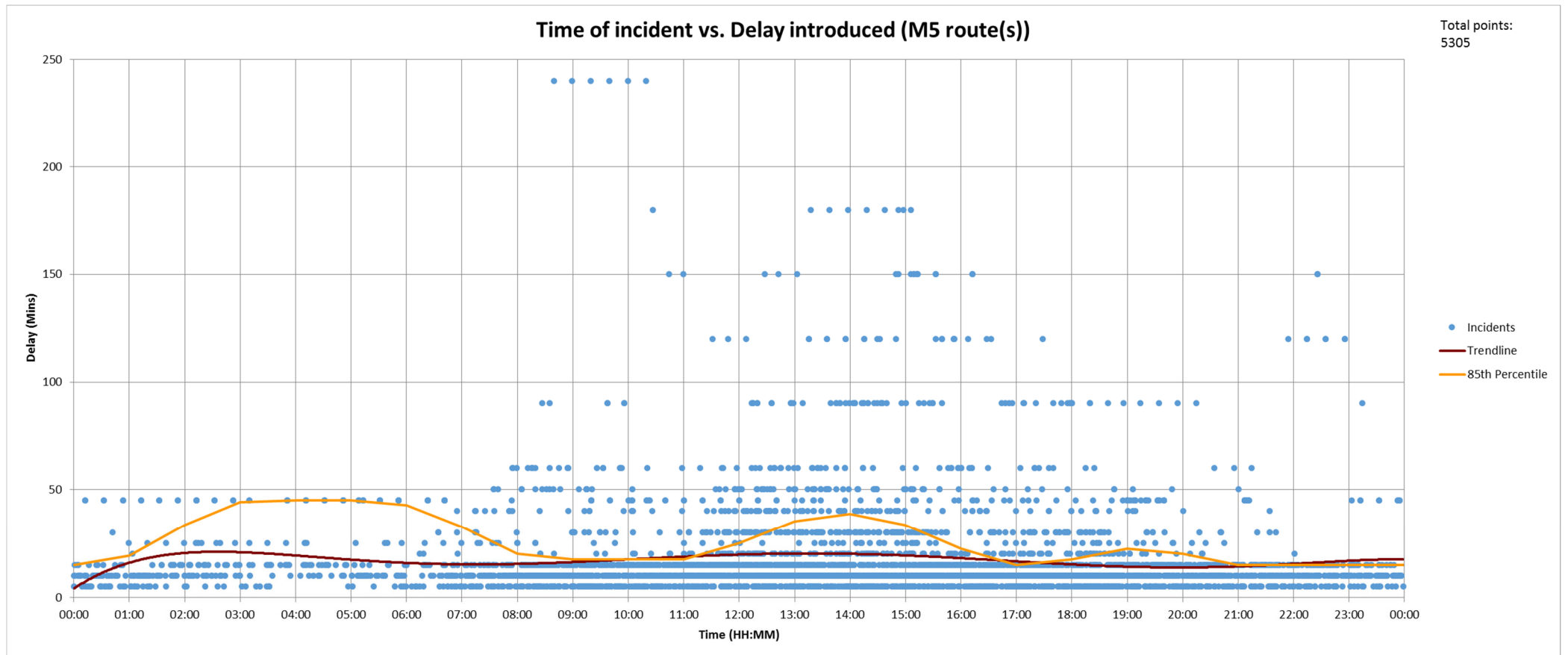


Figure 3-4: Graph of Time of incident vs. Delay introduced for the M5 route, 24-hour data for all month types.

The RSS tool output in Figure 3-2 shows that the highest levels of average delay per hour over the 07:00 to 19:00 period are experienced on the A303 between Amesbury and Berwick Down (i.e. near Stonehenge) and the M5 between Weston-Super-Mare and Bristol. Throughout the available RSS tool outputs other than the AM period, there is a recurring trend of these two sections experiencing the highest levels of average delay per hour, with the A303 eastbound between Berwick Down and Yeovil and the M5 between Taunton and Weston-Super-Mare also frequently experiencing high levels of average delay per hour. This coincides with the single carriageway sections of the A303 and existing scheme commitments in 'RIS1: Sparkford to Ilchester and Amesbury to Berwick Down (Stonehenge)', highlighting a key area of concern that impedes traffic travelling in both directions.

The results of the RSS tool also evidence that there are similar levels of average delay per hour on the A303 and M5 corridors, despite the additional capacity on the M5. There is therefore no reliable alternative route into the South West and investment is essential to provide the region with improved connectivity.

This is exacerbated by the unreliability of the rail service connecting the South West to London. The rail industry publishes Public Performance Measure (PPM) results quarterly at sector and Train Operating Company (TOC) level across the year. PPM measures operational performance for all passenger services and is used to evaluate the overall punctuality and reliability of train services. Great Western Railway (GWR)'s PPM summary for rail period 8 2018/2019 shows rail services between London and the West of England consistently performing below the target PPM levels, with 'right time arrivals' at approximately 20% throughout the year. There is therefore a lack of reliable alternative modes to travel into the South West.

The graphs in Figure 3-3 and Figure 3-4 show trends in the severity of delay introduced by individual incidents, highlighting the tendency for large quantities of low delay incidents (e.g. congestion) to occur on the A303/A30 route, and most high delay incidents (e.g. crashes) to occur on the M5 route. For the A303/A30 route, the trendline stays within the 10 – 15 minute interval and the 85th percentile line varies within the 15 - 25 minute interval, whereas for the M5 route the trendline varies between the 15 and 25 minute intervals and the 85th percentile line varies between the 15 - 45 minute interval. This demonstrates that the A303/A30 tends to experience large quantities of incidents with low individual levels of delay, whereas the M5 route tends to experience lower quantities of incidents with higher individual levels of delay. This is further exemplified by the quantity of incidents experienced, with the M5 route totalling 5305 incidents and having many incidents introducing an hour or more of delay, and the A303/A30 route totalling 5770 incidents despite accommodating roughly half as many vehicles and having only 9 incidents introducing an hour or more of delay.

The graphs also demonstrate that there is no clear trend in the time of incident occurrence other than an increase in incident frequency after 07:00, with both routes experiencing delays consistently throughout the day. This means that road users can neither choose a route or time of day to travel in order to reduce journey delay, highlighting the lack of a reliable route into the South West.

4. Regional Benefits

4.1. GVA Context

GVA is the grand total of all revenues, from final sales and (net) subsidies, which are incomes into businesses. These incomes are then used to cover expenses (wages & salaries, dividends), savings (profits, depreciation), and (indirect) taxes. As the total aggregates of taxes on products and subsidies on products are only available at whole UK economy level, GVA is used for measuring gross regional domestic product and other measures of the output of entities smaller than a whole economy (for this study, these ‘entities’ are the individual counties affected by the route).

GVA trends for the South West since 1998 have been in line with wider UK patterns (see Figure 4-1), showing a gradual increase, with a decrease in 2008 as a result of the economic recession (ONS, 2018). Total GVA and GVA per head for 2015 for each of the areas in the South West are shown in Table 4-1 (ONS, 2018).



Figure 4-1: GVA growth in the South West and UK, 1998 to 2016 (ONS, 2018)

Area	Total GVA (£m, 2015)	Total GVA (% 2015)	GVA per head (£, 2015)
Gloucestershire, Wiltshire, Bath & Bristol	64,336	53%	24,877
<i>City of Bristol</i>	13,671	11%	28,863
<i>Bath, North East & North Somerset</i>	17,870	15%	25,456
<i>Gloucestershire</i>	15,759	13%	23,269

Area	Total GVA (£m, 2015)	Total GVA (% 2015)	GVA per head (£, 2015)
Swindon	6,580	5%	30,945
Wiltshire CC	10,456	9%	19,771
Dorset and Somerset	26,427	22%	19,555
Bournemouth and Poole	7,804	6%	22,981
Dorset CC	7,912	6%	18,293
Somerset	10,711	9%	18,381
Cornwall & Isles of Scilly	9,122	7%	15,403
Cornwall & Isles of Scilly	9,122	7%	15,403
Devon	22,440	18%	17,966
Plymouth	4,950	4%	19,943
Torbay	1,989	2%	14,226
Devon CC	15,501	13%	17,942
South West	122,326	100%	22,772
UK	1,684,937	7.4%	25,878

Table 4-1: GVA in the South West, 2015 (Income approach) (ONS, 2018)

The immediately adjoining counties to the A303/A358/A30 are Wiltshire, Somerset and Devon. It is important to note that these areas are reliant on the A303/A30 as a link to London and the South East (i.e. Cornwall, Devon, Dorset, Plymouth, Somerset, and Torbay) and are more rural than other areas; all have a GVA per head below the South West and UK averages as shown in Table 4-1.

Table 4-2 below shows GVA by industry sector across the whole of the South West. The dominant sectors are manufacturing (C), wholesale, retail motor repair (G) and real estate (L). There are low levels of GVA arising from agriculture (A), transport and storage (H) and arts, entertainment and recreation (R).

Sector	GVA (£m, 2015)	GVA (% 2015)
<i>A: Agriculture, forestry and fishing</i>	£1,370	1.10%
<i>B, D, E: Mining quarrying, electricity, gas, sewerage, etc</i>	£4,230	3.51%
<i>C: Manufacturing</i>	£13,814	11.61%
<i>F: Construction</i>	£8,566	6.88%
<i>G: Wholesale, retail and motor vehicle repair</i>	£13,975	11.22%
<i>H: Transport and Storage</i>	£4,547	3.65%
<i>I: Accommodation and Food Service Activities</i>	£4,487	3.60%
<i>J: Information and Communication</i>	£5,053	4.06%
<i>K: Financial and Insurance Activities</i>	£6,250	5.02%

Sector	GVA (£m, 2015)	GVA (% , 2015)
<i>L: Real Estate Activities</i>	£17,894	14.36%
<i>M: Professional, Scientific and Technical Activities</i>	£8,262	6.63%
<i>N: Administrative and Support Service Activities</i>	£5,451	4.38%
<i>O: Public administration and defence</i>	£8,388	6.73%
<i>P: Education</i>	£7,172	5.76%
<i>Q: Human Health and Social Work Activities</i>	£10,284	8.25%
<i>R: Arts, Entertainment and Recreation</i>	£1,562	1.25%
<i>S: Other Service Activities</i>	£2,631	2.11%
<i>T: Activities of Households</i>	£652	0.52%
Total	£124,589	100%

Table 4-2: GVA per industry sector in the South West, 2015 (Income approach) (ONS, 2018)

4.2. Business Survey Results & Predicted GVA Impacts

A survey of businesses that would potentially be affected by the A303/A30/A358 dualling scheme, carried out in 2012, found strong, positive support of the scheme, with 89% stating that the route's unreliability was harming their business. 412 of the 467 respondents (88.2%) predicted a positive impact from the scheme, and 291 of the 467 respondents (62.3%) predicted an increase in turnover directly attributable to the scheme.

Amongst other questions, respondents were asked to categorise the expected impact of the whole route A303/A30/A358 improvements to their business turnover, which have then been assigned an uplift value as detailed below in Table 4-3. Respondents were also asked to categorise their current annual turnover in to intervals, as detailed below in Table 4-4. Over 50% of respondent businesses have estimated their turnover will increase by roughly 10%, and over 50% of respondent businesses that provided an annual turnover fall in to the lowest category of under £125,000 per annum.

Response	Interval value	No. of respondents
<i>Increase turnover 0 – 10%</i>	5%	192
<i>Increase turnover 10 – 20%</i>	15%	69
<i>Increase turnover 20 – 30%</i>	25%	17
<i>Increase turnover over 30%</i>	30%	13
<i>No change in turnover</i>	0%	167
<i>Reduce turnover</i>	-5%	9

Table 4-3: Business survey turnover increase response interval values.

Turnover (£1,000s)	No. of respondents
<i>Under 125</i>	185
<i>125 – 250</i>	79

250 – 500	59
500 – 1,000	65
1,000 – 5,000	69
5,000 – 25,000	44
25,000 – 500,000	18
Over 500,000	5
Decline to answer	161

Table 4-4: Business survey annual turnover response values.

Respondent businesses have been categorised by county of residence, the total reported turnover calculated for each predicted turnover increase interval, and the uplifts applied to the total turnover for the interval. The cumulative total of uplifted turnover has then been compared with the total reported turnover to find a final predicted uplift as a result of the scheme. Somerset is deemed to be most directly affected by the proposed scheme and had the highest proportion of survey responses of any region (60%), so has been used as a base with the final predicted uplift scaled down for counties further from the scheme area. This has resulted in a maximum uplift value of 3.03% being applied to Somerset, with lower uplifts being applied to other counties. This scaling is detailed below in Table 4-5; the values are taken from the 2013 Parsons Brinckerhoff report “A303 A358 A30: Corridor Improvement Programme Economic Impact Study”². Any locations not listed have been treated as unaffected by the proposed scheme (i.e. have been assigned a scaling of 0%).

NUTS3 Region:	Scaling:	Scaling applied to uplift:
<i>Dorset CC</i>	58%	1.75%
<i>Wiltshire</i>	71%	2.15%
<i>Plymouth</i>	55%	1.67%
<i>Somerset</i>	100%	3.03%
<i>Devon CC</i>	64%	1.94%
<i>Cornwall and Isles of Scilly</i>	42%	1.27%
<i>Torbay</i>	64%	1.94%

Table 4-5: Uplift scaling as applied to calculated uplift value.

The regional 2015 GVA values included in Table 4-1 have then been forecast back to 2010 and forward to 2085, 60 years after the assumed scheme opening year of 2025, using growth values calculated from yearly national GVA statistics (ONS, 2018). By applying regional uplift values, as seen in Table 4-5, and discounting to a 2010 base year, predicted regional GVA increases as a direct result of the whole A303/A358/A30 Corridor Improvements have been calculated. These results are shown below in Table 4-6.

² [Final Draft available here](#)

<i>NUTS3 Region:</i>	<i>Predicted GVA benefit (£b):</i>
<i>Dorset CC</i>	4.53
<i>Wiltshire</i>	7.01
<i>Plymouth</i>	2.72
<i>Somerset</i>	10.64
<i>Devon CC</i>	9.77
<i>Cornwall and Isles of Scilly</i>	3.84
<i>Torbay</i>	1.26
<i>Total</i>	39.77

Table 4-6: Predicted regional GVA benefits from introduction of scheme.

These results highlight a potentially large benefit to GVA in the South West, particularly Somerset and Devon CC, with a total predicted GVA benefit of £39.77 billion across the South West region should a whole corridor improvement be delivered.

5. Conclusion

This report has investigated the potential impacts of the A303/A358/A30 Corridor Improvement Programme. This has been done through analysis of economic impacts via GVA calculations, and route performance via the RSS tool. In addition, it has explored the context of the need for these improvements.

Background information on the national and local policy, planning, and employment context has laid out the importance of the A303/A358/A30 route for regional businesses, being the primary access route to London and the South East. The need for investment in the route has been identified throughout national and local documents, showing a general consensus about the current underperformance of the route and need for improvements.

The performance of the route has been analysed through a bespoke RSS tool. The results highlight the coincidence of single carriageway sections and high levels of delay and frequent unplanned traffic incidents, particularly at Stonehenge. The analysis also highlights that similar delays and incidences are experienced on the M5 corridor with no clear trend in time of occurrence, leaving the South West with no reliable alternative route to the rest of the country. This indicates the particular need for the A303/A358/A30 corridor improvement programme schemes to fully realise the potential of the 'A303 Corridor' area and resolve the existing strategic connectivity issues for the South West.

Whilst the corridor already struggles to cope under current demand conditions, there is a significant amount of development planned for the South West, with over 100,000 dwellings and 530 hectares of employment planned in the wider district areas adjoining the corridor. These problems are expected to be exacerbated under forecast increased demand of up to 40% by 2040. For the region's population and economy to grow, a high-quality transport network is required.

Evidence has been presented which demonstrates the economic performance of settlements along the M5 corridor, such as Swindon, Bath and Bristol, perform significantly better than those along the A303, such as Devon, Somerset and Wiltshire. GVA per head along the A303 corridor is considerably below the national average. Analysis of economic impacts from the introduction of the whole corridor improvement programme, through the results of a business survey, have shown that the entire South West region would potentially benefit from GVA benefits in excess of £39 billion. Somerset, Devon, and Wiltshire would benefit from the largest gains (£10.64, £9.77, and £7.01 billion, respectively) over a 60-year appraisal period. The improvements to the A303/A358/A30 corridor have the potential to significantly improve the economic performance of the region and rebalance the relative performances of the economies reliant on the two key strategic transport corridors. This accords with the Industrial Strategy's vision of addressing the disparities in regional productivity.

These sections have each, individually and as a collective, indicated that there are substantial benefits to the South West associated with dualling the A303/A30 from Amesbury to Berwick Down, Sparkford to Ilchester, and the A358 between Taunton and Southfields, as well as minor improvements between Honiton and Southfields. This is in line with the 'Transport Investment Strategy' funding aims to target projects that help rebalance the economy and provide an integrated network to connect communities

across the country. However, the full economic benefits can only ultimately be realised with the delivery of an end to end improvement to the A303/A358/A30 corridor.