A12 Suffolk Energy Gateway

Suffolk County Council

A12 Suffolk Energy Gateway - Strategic Case

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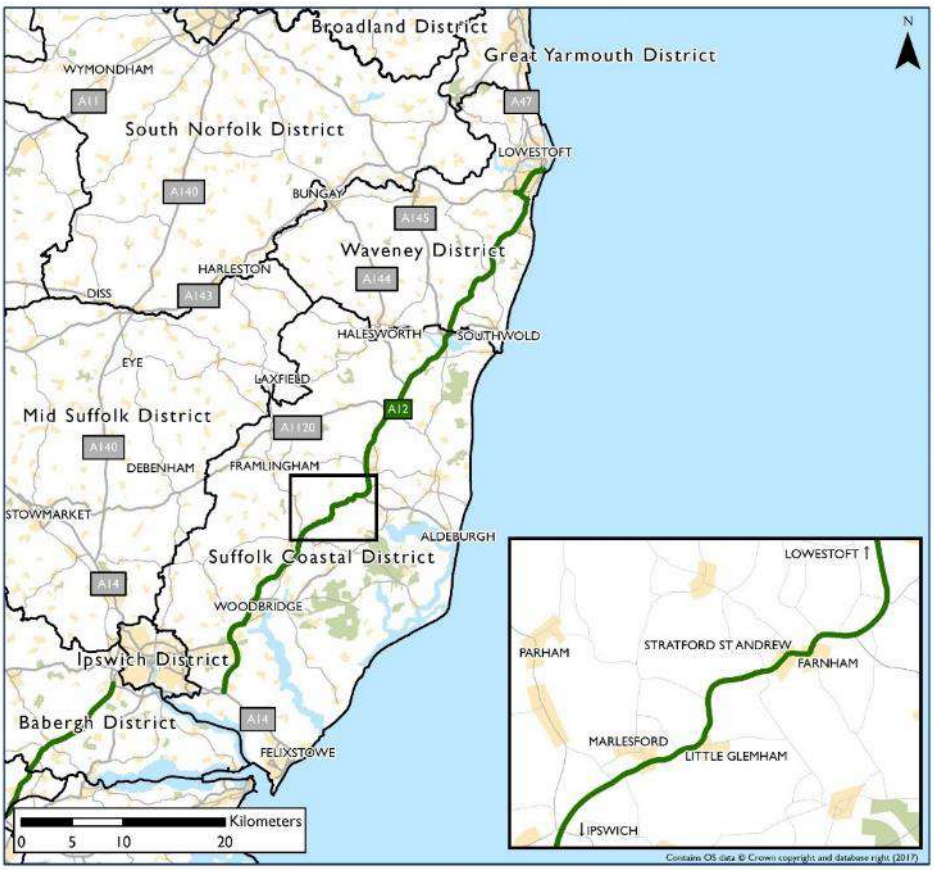
Contents

Executive Summary

The Scheme

The A12 is the main corridor for movement within, to and from "Suffolk's Energy Coast". It links two of the county's main settlements, Ipswich and Lowestoft, and the array of communities, businesses, energy assets and visitor attractions in their hinterland with the Strategic Road Network, international gateways (ports at Felixstowe, Ipswich and Lowestoft) and each other. Alongside the East Suffolk Rail Line, it forms the basis of East Suffolk's future prosperity. The location of the study area is shown below.



The A12 Suffolk's Energy Gateway scheme (hereafter referred to as SEGway) comprises an improvement to the 4.5 mile (7 km) section between the B1078 at Wickham Market and the A1094 at Saxmundham in East Suffolk. The preferred option:

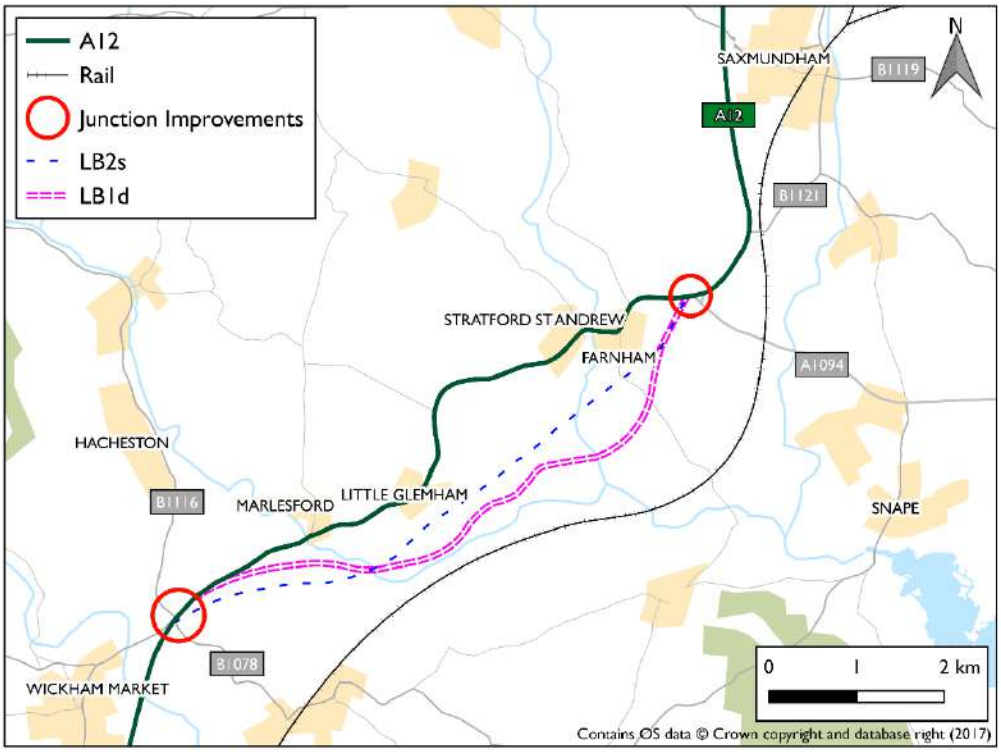
- Joins two sections of existing dual carriageway through a new 70mph dual carriageway segregated from local roads.
- Bypasses the four communities of Marlesford, Little Glemham, Stratford St. Andrew and Farnham currently subject to all the adverse impacts of traffic. It does this to the south and east of these communities.
- Incorporates upgrades to sub-standard junction layouts at both the B1078 and A1094 intersections including:
    - an expanded roundabout at the junction of the B1078 and B1116 to cater for a realigned on-slip road to the northbound A12 and a new connection to the old A12 toward Marlesford;
    - a new roundabout junction for the B1078, southbound A12 off-slip, southbound A12 on-slip and the unclassified Station Road to improve the current substandard staggered cross-roads to the east of the existing A12 overbridge; and
    - a replacement of the existing dual carriageway priority junction with central reserve at the A12 and A1094 with a new roundabout also incorporating a connection to the old A12 to Farnham.

- Incorporates viaduct structures over the River Ore and Alde floodplains.
- Incorporates provision for existing roads and public rights of way to cross the A12 via overbridge or underbridge structures either in their current location or through short diversions to amalgamate crossing points.
- Incorporates appropriate environmental mitigation measures.

It would be subject to preliminary design and further consultation in 2018 with a view to submitting a planning application for determination in early 2019. It then would be built between April 2021 and April 2023, opening to the public in April 2023.

It represents the first phase of improvements to the A12 corridor between Ipswich and Lowestoft considered necessary by amongst others, the hosting authorities of Suffolk County Council, Suffolk Coastal District Council and Waveney District Council.

The location of the scheme within the study area is shown below:



Why?

The Strategic Case sets out the need for improvement of the A12 and how funding can benefit the New Anglia Local Enterprise Partnership (LEP) region and in particular Suffolk in terms of quality of life, homes, jobs and a more resilient and productive economy. It highlights the strong support the case for investment has amongst local stakeholders. Norfolk and Suffolk contribute £35 billion to UK plc[1] and when there is investment in this region it delivers further growth. This is all founded on numerous assets and growth sectors, including the following five sectors of particular relevance to East Suffolk:

- **Energy** – This sector adds £1 billion GVA to Norfolk's and Suffolk's economy each year[2]. Major features of the sector include:
    - EDF Energy's Sizewell B nuclear power station, their planned investment in Sizewell C nuclear power station and the 25,000 job roles associated with it. Sizewell was identified in 2011 by the Government's *National Policy Statement for Nuclear Power Generation*[3] as a potentially suitable site for a new nuclear power station because of its proximity to an existing power station (Sizewell B), the North Sea and its relatively isolated location.
    - The East Anglia Array, Greater Gabbard and Galloper off-shore wind turbine fields serviced from the Port of Lowestoft, its Centre for Offshore Renewable Engineering, and clusters of manufacturing firms centred within Lowestoft's successful Enterprise Zone. Scottish Power is planning to invest in a further 3,000 job roles associated with East Anglia ONE offshore wind.
    - This recent and future investment in the nuclear and renewable energy industry is vital to the achievement of the UK Government's Clean Growth Strategy (October 2017).
- **Information and Communications Technology (ICT), Tech and Digital Creative** - Adastral Business Park at Martlesham Heath, home to BT's Global Research and Development Headquarters, and Innovation Martlesham – an established (and growing) cluster of around 100 high-tech ICT firms.
- **Advanced Agriculture, Food and Drink** - The region supplies significant amount of food and drink to the country's supermarkets and the region's artisan products are a draw for visitors. Major firms include Adnams, Birds Eye alongside smaller firms such as Stokes Sauces and a wide range of restaurants, shops and markets all promoted by the East Suffolk Food and Drink Trails, a collaborative initiative by Defra, Suffolk Coastal District Council and Waveney District Council. Furthermore, the Centre for Environment, Fisheries and Aquaculture (Cefas) works across multiple sectors from its basis as a world leader in innovation and research in marine science. This has been strengthened with a recent £16 million Government investment in new and refurbished facilities at its Lowestoft Headquarters, with these due to open in 2019.
- **Visitor Economy, Tourism, Heritage and Culture** - In 2013 there were over 10 million visits made to East Suffolk with a total direct visitor spend of £462 million[4]. The total value of tourism to East Suffolk's economy and well-being is important, contributing £590 million and over 12,500 jobs. Suffolk's Energy Coast is supported by a strong cultural offer through festivals such as Aldeburgh and Latitude, alongside popular resorts such as Southwold, and things to do and visit such as nature reserves including The Broads National Park, historic buildings and castles, wildlife parks, restaurants and artisan shops all accessed by the A12.
- **Transport, Freight and Logistics** – is worth £1.3 billion to New Anglia and employs over 23,500 people. Ipswich is the country's largest port for grain export; Great Yarmouth and Lowestoft serve the North Sea energy sector; and Felixstowe is the country's busiest container port, responsible for over 40% of UK container traffic with further investment and expansion underway.

This is all underpinned by **new homes**. Suffolk Coastal District Council and Waveney District Councils are both taking their Local Plans through a review. Suffolk Coastal District Council is looking to consult further on preferred options in 2018 with this subject to Examination in 2019. Waveney District Council is currently working towards submitting a final version of the Local Plan for Examination in late spring of 2018, with adoption

[1] New Anglia LEP et al., Norfolk and Suffolk Economic Strategy – A Strategy for Growth and Opportunity Executive Summary, p.5., November 2017
[2] New Anglia LEP et al., Economic Evidence Report (Updated), p. 126, December 2017 - https://newanglia.co.uk/wp-content/uploads/2017/12/2017-12-05-FINAL-Economic-Evidence-Report-single-pages-HighRes.pdf, accessed 8 December 2017
[3] Department for Energy and Climate Change, National Policy Statement for Nuclear Power Generation, July 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47859/2009-nps-for-nuclear-volumeI.pdf, accessed 10 December 2017
[4] Economic Impact of Tourism Reports for Suffolk Coastal and Waveney, 2015, referenced in the East Suffolk Tourism Strategy 2017 to 2022

scheduled for the end of 2018. These Local Plan reviews provide options for the location and scale of housing growth along the A12 and elsewhere in the districts up to 2036, both to cater for housing need and realise further potential employment growth. The ability to realise the full potential is likely to be at least partly linked to the delivery of new infrastructure, such as the SEGway scheme.

Despite this potential only the south of Suffolk's Energy Coast performs on a par with the rest of England. More needs to be done to close that productivity gap and exploit the potential that the region can offer to rebalance the UK economy and achieve wider Government aims associated with trade, industry, decarbonisation of the power grid and tourism. The Economic Strategy for Norfolk and Suffolk has identified the Norfolk and Suffolk Energy Coast including Bacton, Great Yarmouth, Lowestoft and Sizewell with its assets on and offshore as one of its priority places for continued growth.[5]

New Anglia LEP, Suffolk County Council, Suffolk Coastal District Council and Waveney District Council have set out a balanced yet ambitious approach to delivering growth. This matches investment in skills and infrastructure and support for business to ensure that the region is a well-connected place, with an economy that is inclusive, high performing, productive and international facing, including the centre for the UK's clean energy sector with this all staffed by a highly skilled workforce. Their view is that the A12 - and specifically the section between Wickham Market (B1078) and Saxmundham (A1094) - represents the most pressing need for initial investment to help realise these ambitions in East Suffolk, with future spending on other sections of the A12 and East Suffolk Rail Line to follow.

The single carriageway, sub-standard section of the A12 between Wickham Market and Saxmundham is most in need of critical improvement. Key issues are:

- Congestion pinch-points – the narrow, single carriageway section of the A12 experiences unpredictable traffic congestion, particularly at the 'Farnham bend', where two HGVs cannot pass safely.
- Long, unreliable journeys caused by the standard of road and the unpredictable impacts of seasonal agricultural and tourism traffic. This pushes up the cost of doing business, reducing productivity and making it less attractive for investment and a barrier to employing skilled staff or those seeking work.
- High traffic flows on summer Fridays and weekends, demonstrating the vital role that the A12 plays in bringing people to the region to enjoy the visitor economy.
- Poor resilience of the corridor – there is little alternative.
- Road safety including sub-standard junctions.
- Community severance limiting local residents' access to services and social networks, and an air quality management area in Stratford St. Andrew village.
- Perception of the area from inward investors and leisure visitors as a result of all of these factors.
- Expected increase in traffic flows on the A12 corridor as a result of growth in housing, employment, Sizewell C construction and the tourist industry. This would exacerbate all of the above problems for businesses, visitors and residents alike.

Based on the analysis undertaken across the five constituent parts of the Outline Business Case, the view of the Project Delivery Team is that LB1d (Dual Carriageway) is best able to meet the aim of the project, offers the best value for money and has the greatest support of public, business and political stakeholders. Advantages of the dual carriageway option and the resulting benefits include:

- Value for money:
  - ✓ Reduced travel costs for businesses, commuters and visitors through improved connectivity to other major centres and the Strategic Road Network.
  - ✓ Increased road safety benefits by providing safer opportunities for overtaking slow moving vehicles.
  - ✓ Achievement of local noise and air quality benefits.
- Strategic fit with scheme objectives, central government, LEP and local government policy aims:

[5] New Anglia LEP et al., Norfolk and Suffolk Economic Strategy – A Strategy for Growth and Opportunity Executive Summary, p.7., November 2017

  - ✓ It is strongly aligned to the UK Government's Clean Growth Strategy and Industrial Strategy through its support to the delivery of £50 billion of investment in the highly productive energy sector in the next two decades, including 25,000 different job roles associated with Sizewell C and up to 3,000 jobs for Scottish Power's East Anglia ONE offshore wind investment. We forecast that SEGway could contribute £30 million to £115 million of Gross Value Add to the economy over the 60-year appraisal period through its role in facilitating Sizewell C (other infrastructure is of course also important).
  - ✓ It supports sustained growth in the region's tourism offer, responsible for 10,000+ jobs and 10 million annual visits, with SEGway forecast to result in £42.6 million of Gross Value Add benefits to the economy over the 60-year appraisal period through an increase in tourism visits and spending.
  - ✓ Provides essential infrastructure to support potential new homes, with the scale and location of growth to be confirmed in the reviews of each district's Local Plan, with Waveney district's subject to consultation and Examination in Public in 2018, and Suffolk Coastal district's subject to consultation in 2018 and Examination in Public in 2019.
- Future proofs the function of the A12 as part of Suffolk County Council's emerging Major Route Network. It helps provides all road users with a largely consistent and high quality level of service (dual carriageway) for journeys between Ipswich, the A14 (and thereby London, Essex, the Southeast and Midlands) and the A1094 where travel demand splits between the A12 (Saxmundham, Southwold, Lowestoft and Great Yarmouth) and A1094 (Aldeburgh, Leiston and Sizewell). This helps portray the A12 in a positive image as a marketable gateway to a region that is quicker and easier to do business in, live in and visit thereby:
  - ✓ retaining companies and workers,
  - ✓ encouraging repeat visits, and
  - ✓ attracting new businesses, skilled workers, families, and visitors.
- It helps to provide the headroom for East Suffolk's energy and tourism industries and settlements to grow at the pace they want, rather than be dictated by transport network constraints.
- It provides East Suffolk's only major north-south road and its economy with the resilience to cater for significant seasonal variation in travel demand caused by visitors to East Suffolk's wide range of tourist destinations and slow moving agricultural traffic. It will help improve the reliability of travel for East Suffolk's businesses and hauliers to and from the ports of Felixstowe, Ipswich and Lowestoft and the Strategic Road Network. It also caters for the increase in traffic demand caused by ten years of Sizewell C construction and subsequent periodic maintenance outages of both Sizewell B and C power stations.
- Strength of support from the public, business, MPs, district, town and parish councils.

Suffolk County Council are also promoting major investment in transport improvements in Ipswich (Upper Orwell Crossing) and Lowestoft (Lake Lothing Third Crossing), as fast track schemes through the Large Local Major Schemes process. These schemes in addition to SEGway would promote better connectivity within and between Suffolk's two major settlements, and two of its three key ports.

The two remaining sections of A12 single carriageway south of the scheme (close to Woodbridge) are in Suffolk County Council's view more easily solved through lower cost, largely online improvements utilising a wide range of current and future public and private funding options.

This represents a once in a lifetime opportunity to forward fund the further development of SEGway through the design, consultation, planning, scheme orders and procurement phases. This approach helps provide the best opportunity to capture developer funding to deliver SEGway in advance of Sizewell C's peak construction.

1. Introduction

The Strategic Case determines whether or not an investment is needed, either now or in the future. It demonstrates the case for change - that is, a clear rationale for making the investment; and strategic fit - how an investment will further the aims and objectives of Government, Suffolk County Council, Suffolk Coastal District Council, Waveney District Council and the New Anglia Local Enterprise Partnership (LEP).

More specifically, the Strategic Case should:

- Specify the business need for a project;
- Set the context and identify a series of investment aims;
- Assess the investment aims against what Suffolk County Council (and Government) wants to achieve as a whole;
- Determine the case for change and strategic fit. This should be an iterative process as the business case develops, and always supported by robust evidence, such as identifying key risks and constraints; and
- Include responses from consultation with main stakeholder groups.

The Strategic Case is discussed in detail under the following sub-headings. These include specific headings requested as part of the Large Local Major Schemes Bid Checklist as well as typical headings expected within a Strategic Case:

- Existing Situation (Chapter 2)
- Future Situation (Chapter 3)
- Need for Investment (Chapter 4)
- Scheme Objectives (Chapter 5)
- Proposals and Option Assessment (Chapter 6)
- Strategic Fit (Chapter 7)
- Impact of the Scheme on national strategic priorities - Strategic Road Network, HS2, International Gateways, housing, job creation (Chapter 8)
- Planning Position, Stakeholder and Political Support (Chapter 9)
- Other interfaces (Chapter 10)
- Conclusion (Chapter 11).

Further information can be found in supporting Business Case annexes:

1. *Economic Appraisal Report*
2. *Environmental Report*
3. *Forecasting Report*
4. *Option Assessment Report*
5. *SEGway Consultation Report*
6. *Strategic Outline Business Case and its appendices*
7. *2006 Four Villages Study (The Landscape Partnership / Faber Maunsell)*
8. *2013 Four Villages Study (AECOM)*
9. *2014/2015 Four Villages Study (AECOM)*
10. *SCTM Local Model Validation Report (WSP)*
11. *SEGway Local Model Validation Report (WSP)*
12. *SCTM Traffic Data Collection Report (WSP)*
13. *Demand Model Report (WSP)*
14. *SEGway Model Specification Report (WSP).*

Reference should also be made to the Outline Business Case's *Economic Case* to understand the value for money criteria and analysis undertaken for choosing the preferred option.

2. Existing Situation

2.1 Introduction

The chapter is structured under the following sub-headings:

- Population and growth (Section 2.2)
- Educational and skills attainment (Section 2.3)
- Car ownership, distance and journey to work (Section 2.4)
- Economy – employment, deprivation, economic performance and productivity, structure of the economy, growth opportunities (Section 2.5)
- Transport network (Section 2.6)
- Route performance (Section 2.7)
- Users' perception of the A12 (Section 2.8)
- Environment (Section 2.9).

2.2 Population and growth

The 2011 Census provides a recent measure of the total resident population and population density across the study area. The total population of Suffolk Coastal, Ipswich, Waveney, the wider New Anglia Local Enterprise Partnership (LEP) area and England are included in **Table 2-1** below. These three Local Authority districts comprise the major areas of influence for the scheme, with the scheme itself located in the centre of Suffolk Coastal district and connecting the major urban areas of Ipswich to the south and Lowestoft within Waveney to the north. The New Anglia LEP covers the wider area of Suffolk and Norfolk.

Geographical Area	2001	2011	Change	
			Number	%
Suffolk Coastal district	115,141	124,298	9,157	8.0
Ipswich borough	117,069	133,384	16,315	13.9
Waveney district	112,342	115,254	2,912	2.6
New Anglia LEP area	-	1,586,051	-	-
England	49,138,831	53,012,456	3,873,625	7.9

Source: 2001 and 2011 Census.

Table 2-1: Historic trends in total resident population, 2001-2011.

Table 2-1 shows that Suffolk Coastal district's population increased by approximately 8% between 2001 and 2011; similar to the population growth percentage for England as a whole. Ipswich to the south grew substantially faster, with a 14% increase in population from 2001 to 2011. Growth in Waveney starting from a similar base in 2001 has not matched that of the other districts with only 2.6% growth.

The Ipswich[6] and Waveney Housing Market Area (HMA) Strategic Assessment studies[7] highlight the attractiveness of the area as a place to live and the impact this has had on population increase between 2001 and 2015. This is important in that the Local Planning Authorities are required through the Local Plan process to seek to meet the expected housing needs of migrants from both domestic and overseas sources, as well as the impacts of other demographic changes.

The Ipswich HMA has continued to experience persistent population growth although this has slowed down in recent years. Of all the Ipswich HMA authorities Suffolk Coastal District experienced the greatest increase in population as a result of domestic migration; 14,090 in total. This figure represents 11.3% of the 2014-15 population. How this has varied over the 2001 to 2015 time period is illustrated in **Figure 2-1**.

[6] The Ipswich Housing Market Area is defined as Ipswich, Babergh, Mid Suffolk and Suffolk Coastal Districts.
[7] Ipswich and Waveney Housing Market Areas, Strategic Housing Market Assessment Part 1, Peter Brett Associates, May 2017

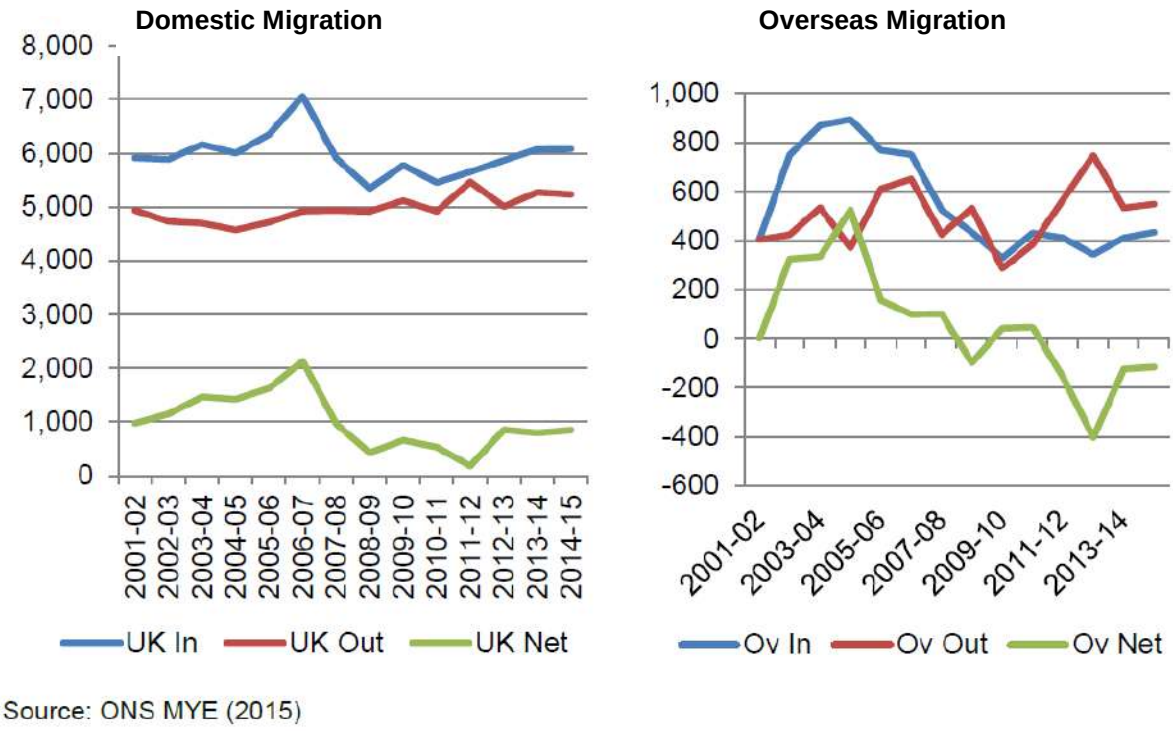


Figure 2-1 : Suffolk Coastal District – Domestic and Overseas Migration (2001 – 2015), Source: Peter Brett Associates, 2017.

2.3 Educational and skills attainment

The New Anglia LEP has invested significant funding in improving education and skills infrastructure within the wider Suffolk and Norfolk region, most notably following the City Deals signed for Ipswich and Norwich and the April 2015 Growth Deal investment awarded by the UK Government[8]. Notable projects benefitting from the Growth Deal funding within the region have included £2.5 million for the establishment of the Lowestoft Enterprise Zone, £5 million invested in expanding superfast broadband across Suffolk, £13 million awarded to 265 businesses as part of the Growing Business Fund as well as numerous investments in new college facilities and transport schemes across the wider LEP area. The LEP published a Skills Manifesto in 2013 and set up a Skills Board to deliver their skills strategy across the region. A LEP Skills Investment Fund also provides £4 million worth of funding for local employers to secure Skills Deals with the LEP.

Table 2-2 shows that the proportion of the population of the Suffolk Coastal district holding higher level qualifications is marginally above the national average. The proportion of the population of Waveney district and Ipswich borough with higher level qualifications is below the national average. New investment by the New Anglia LEP is aimed at addressing this discrepancy across the region. Higher qualified people are understood to typically be more willing to travel further to access higher skilled jobs, indicating that the population of Suffolk Coastal district are currently more likely to travel further to reach the key employment centres in the surrounding districts.

Highest qualification held	Suffolk Coastal	Ipswich	Waveney	New Anglia	England
No qualifications	21%	26%	30%	25%	22%
Level 1 (equivalent to GCSE G-D grade)	13%	16%	14%	14%	13%
Level 2 (equivalent to GCSE A*-C grade)	17%	16%	16%	16%	15%
Apprenticeship	4%	4%	5%	4%	4%
Level 3 (equivalent to A level)	11%	11%	12%	12%	12%
Level 4 or above (equivalent to a diploma)	29%	21%	18%	23%	27%

Source: Census 2011 (DC5102EW)

Table 2-2: Highest qualification held by residents of each district in the study area, New Anglia LEP and England

[8] https://newanglia.co.uk/growth-deal/, accessed 8 December 2017

2.4 Car ownership and travel to work

Table 2-3 shows that car ownership in the Suffolk Coastal district is significantly higher than in England and the surrounding districts. In Suffolk Coastal, 91% of households own one or more car or vans compared to 80% nationally.

No. of cars in household	Suffolk Coastal	Ipswich	Waveney	New Anglia	England
No car or van	9%	21%	16%	13%	20%
One car or van	36%	44%	43%	39%	39%
Two or more car or van	55%	35%	42%	48%	41%

Source: Census 2011 (DC4109EWla)

Table 2-3: Car ownership levels in the study area

These high rates of car ownership are reflected in **Table 2-4** which shows that 63% of workers in the Suffolk Coastal district drive to their place of work in a car / van, compared to 54% nationally.

Mode of travel	Suffolk Coastal	Ipswich	Waveney	New Anglia	England
Work from home	14%	7%	10%	12%	10%
Train, underground,	2%	2%	1%	2%	9%
Bus, mini bus or coach	2%	8%	3%	4%	7%
Driving a car or van	63%	54%	61%	61%	54%
Passenger in a Car or Van	4%	7%	5%	5%	5%
Bicycle	4%	5%	6%	4%	3%
On foot	8%	16%	10%	10%	10%
Other	2%	2%	3%	2%	2%

Source: Census 2011 (DC7101EWla)

Table 2-4: Mode of travel to work by residents of each district, New Anglia LEP and England

Table 2-5 shows that distances travelled to work in the Suffolk Coastal district are generally in line with the national picture. It is notable however, that a greater proportion work mainly at or from home.

Distance travelled to work	Suffolk Coastal	Ipswich	Waveney	New Anglia	England
Less than 2km	16%	25%	21%	18%	17%
2km to less than 5km	14%	28%	19%	16%	18%
5km to less than 10km	15%	10%	10%	13%	17%
10km to less than 20km	17%	10%	15%	15%	15%
20km to less than 30km	5%	4%	5%	8%	6%
30km to less than 40km	3%	2%	4%	3%	3%
40km to less than 60km	2%	2%	2%	2%	2%
60km and over	5%	4%	3%	4%	3%
Work mainly at or from home	14%	7%	10%	12%	10%
Other	8%	8%	10%	9%	8%

Source: Census 2011 (DC7102EWla)

Table 2-5 : Distance travelled to work by residents of each district in the study area, New Anglia LEP and England

Figure 2-2, **Figure 2-3** and **Figure 2-4** show the main commuting flows and workplace locations for residents of the Suffolk Coastal district, in comparison to Ipswich and Waveney.

Data for the Suffolk Coastal district indicates that the majority of the residents also work in this local authority area, with over 20,000 people commuting by car or other forms of road transport. A large number of Suffolk Coastal residents also commute to Ipswich, with up to 10,000 commuters travelling by road to the borough. As the only major north-south road within the district, it is likely that a large number of these journeys utilise the A12.

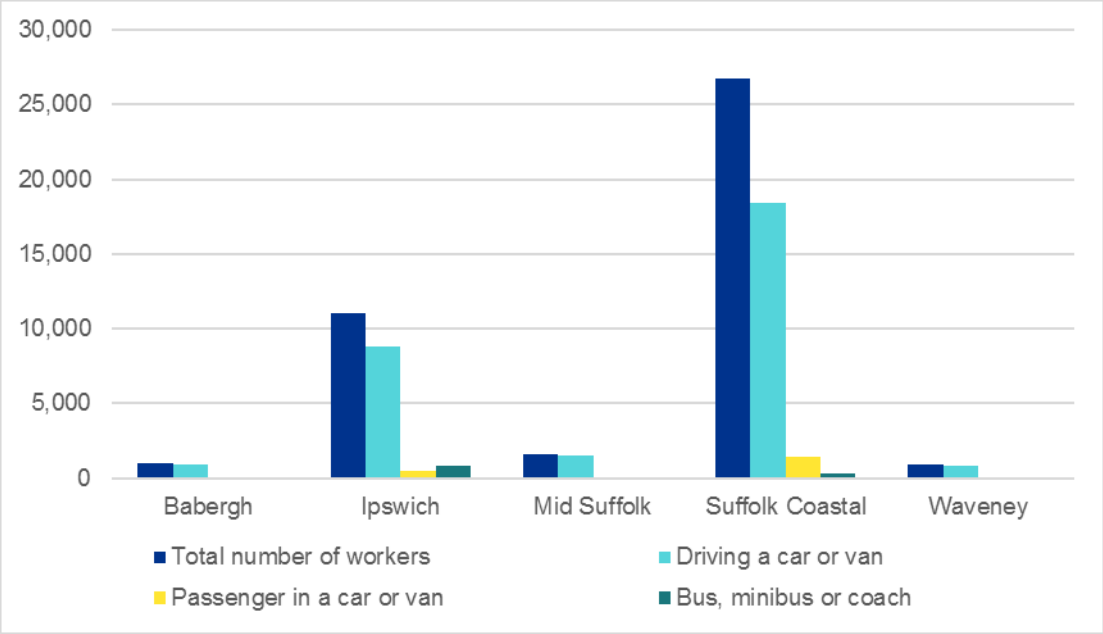


Figure 2-2: Location of workplace and mode of travel to work by road for residents of Suffolk Coastal district

By comparison, **Figure 2-3** shows the numbers of workers commuting from Ipswich borough to Suffolk Coastal district and Waveney district. Approximately 6,500 commuters travel by road to Suffolk Coastal district daily, significantly fewer than those that travel in the opposite direction. Although still an important commuting flow, this is mainly using the A12. Only a very small number of workers commute daily from Ipswich borough to Waveney district and vice versa.

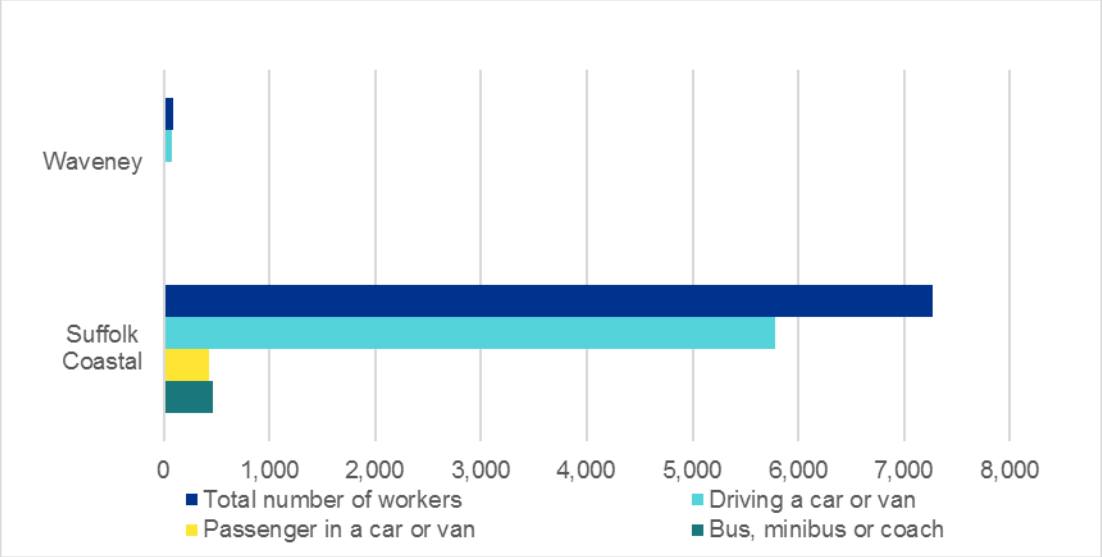


Figure 2-3: Location of workplace and mode of travel to work by road for residents of Ipswich borough

The numbers of commuters travelling from Waveney district to Suffolk Coastal district and Ipswich borough are significantly lower than the commuting flows between these latter two areas. However, in excess of 1,200 commuters still travel to Suffolk Coastal district daily by road.

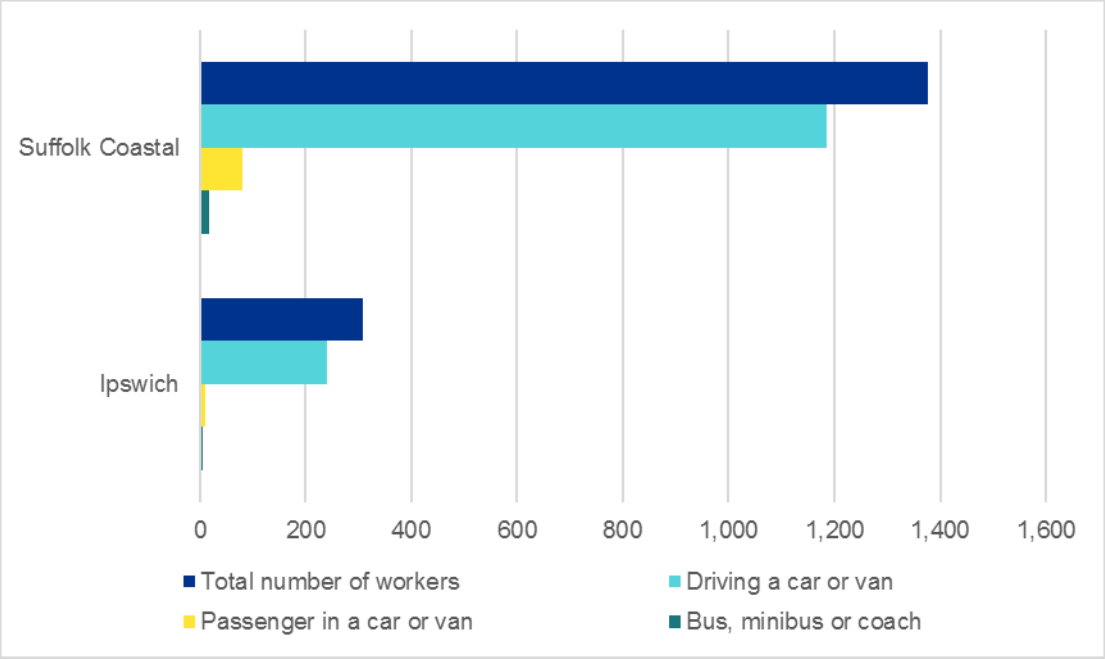


Figure 2-4: Location of workplace and proportion of travel to work by road for residents of Waveney district

Key Observations

- *Population growth in Suffolk Coastal district has been partly driven by domestic migration, reflecting the attractiveness of the area as a place to live.*
- *Population growth in Waveney district has not been as high as Suffolk Coastal district and the rest of England.*
- *91% of households have access to the car within Suffolk Coastal district, and so is the predominate method of travel to work for residents.*
- *Distances travelled to work are higher for Suffolk Coastal district compared to Waveney district and Ipswich borough which have larger urban centres to reduce journey distances.*
- *Qualifications for Suffolk Coastal district residents closely match those of England. Waveney district in comparison performs poorly compared to the national average.*

2.5 Economy

2.5.1 Employment and Labour Market

The Business Register and Employment Survey (BRES) publish employee and employment estimates at detailed geographical and industrial levels, based on data gathered from businesses. **Table 2-6** shows historic trend BRES data for the period 2011 to 2015.

Geographical Area	2011	2015	Change 2011-2015	
			Number	%
Suffolk Coastal district	46,007	48,807	2,800	6.1
Ipswich borough	65,765	69,450	3,685	5.6
Waveney district	38,880	39,525	645	1.7
New Anglia LEP area	617,053	654,919	37,866	6.1

Source: 2015 BRES. The BRES definition of an employee is anyone working on the BRES reference date who is aged 16 years or over that the contributor directly pays from its payroll(s), in return for carrying out a full-time or part-time job or being on a training scheme.

Table 2-6: Total employees and growth by district and New Anglia LEP area, 2011-2015

Percentage growth in employment has been highest in Suffolk Coastal district, closely followed by Ipswich borough. As with population change, Waveney district has experienced comparatively lower growth.

2.5.2 Economic performance and productivity

Gross Value Added (GVA) measures the contribution to the economy of each individual producer, industry or sector in the UK. It is used in the estimation of gross domestic product (GDP), a key indicator of the state of the overall economy. Data for GVA per filled job can be used as a measure of productivity.

Table 2-7 sets out workplace-based GVA per head for the Suffolk Coastal, Ipswich and Waveney local authorities, compared to New Anglia LEP Area and England and how that has changed between 2005 and 2015.

Geographical Area	Total GVA, £ per head		Change 2005-2015	
	2005	2015	Number	%
Suffolk Coastal district	19,538	24,362	4,824	25
Ipswich borough	20,913	24,669	3,756	18
Waveney district	15,240	19,068	3,828	25
New Anglia LEP	17,857	21,788	3,931	22
England	20,738	26,159	5,421	26

Table 2-7: Changes in GVA (£ per head), 2005-2015. Source: ONS 2015.

Suffolk Coastal district performs above average (£24,362 per head) compared to the New Anglia LEP area (£21,788 per head), but below the figure for England as a whole (£26,159 per head). Over the ten-year period Suffolk Coastal district has largely matched the growth of England and almost closed the gap in productivity with Ipswich borough. Waveney district to the north of the SEGway scheme lags significantly behind in terms of productivity, despite the 25% growth. This suggests that the productivity gap is persistent and entrenched. Interestingly the GVA performance for Waveney district is on a par with performance of the North of England region (around a 25% gap compared to England) described in significant detail within the Northern Powerhouse Independent Economic Review.[9] The lack of connectivity with the rest of East Suffolk and hence the rest of the English economy is likely to be a key contributor to the performance of Waveney district. Further connectivity improvements associated with Suffolk's Energy Coast across road, rail and digital infrastructure will help to completely close the gap for Suffolk Coastal district and take Waveney district out of its entrenched position.

2.5.3 Deprivation

The Indices of Multiple Deprivation (IMD) were updated in 2015, and measure deprivation across seven domains: income; employment; education, skills and training; health and disability; crime; barriers to housing and services; and living environment. **Table 2-8** demonstrates that across the study area and surrounding districts, Suffolk Coastal district has the lowest levels of deprivation, with 0% of LSOAs (Census and National Statistics - Lower Super Output Areas) falling within the most deprived 10% of LSOAs nationally. By comparison, Ipswich borough and Waveney district have 14% and 12% of their LSOAs within the 10% most deprived LSOAs nationally.

Local Authority	% of LSOAs in 10% most deprived in England
Suffolk Coastal district	0%
Ipswich borough	14%
Waveney district	12%

Table 2-8: Presence of 10% most deprived LSOAs within the study area. Source: English Index of Multiple Deprivation, 2015[10]

[9] SQW (2016): Northern Powerhouse Independent Economic Review http://www.sqw.co.uk/insights-and-publications/northern-powerhouse-independent-economic-review/ accessed 31 July 2017

[10] https://www.gov.uk/government/statistics/english-indices-of-deprivation-2015

Figure 2-5 shows the Index of Multiple Deprivation Rank for LSOAs located along the route of the proposed SEGway scheme, as well as other significant employment centres within the region, such as Ipswich, Lowestoft, Sizewell nuclear power station and Adastral Park in Martlesham. The deprivation divide across the region is notable, with areas of Ipswich and Lowestoft in particular displaying significantly higher levels of deprivation.

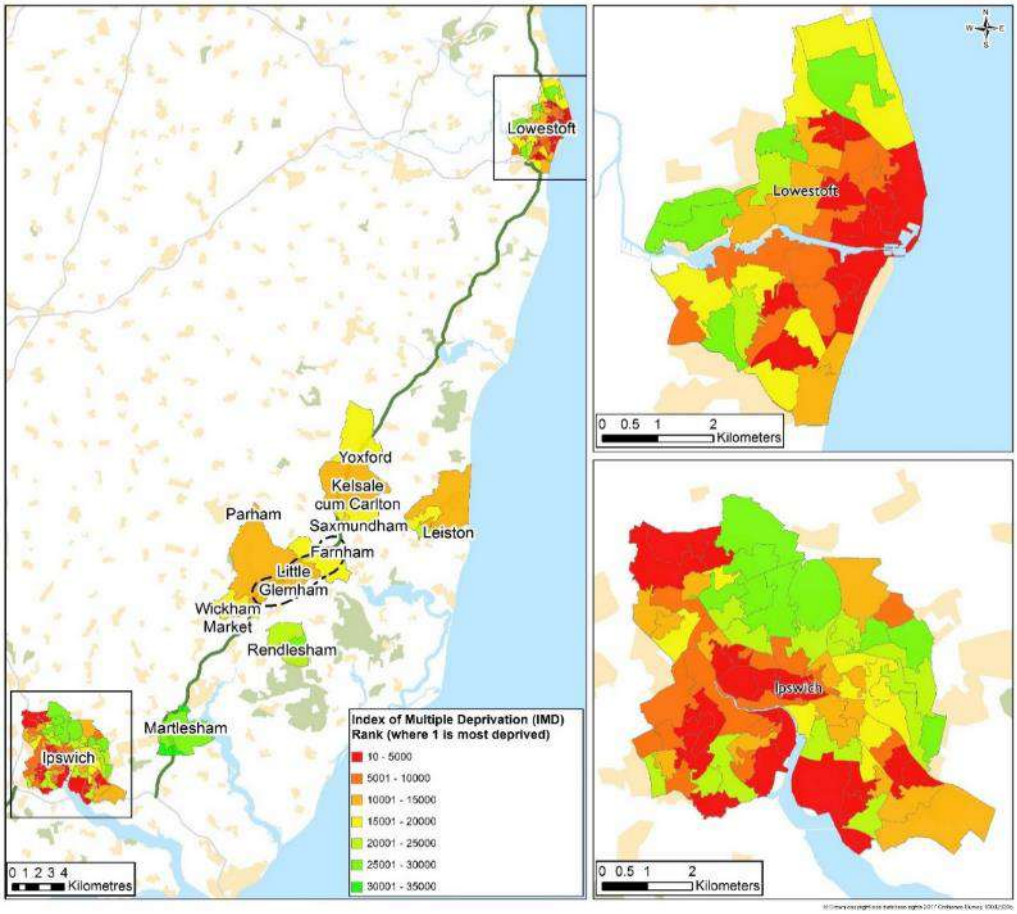


Figure 2-5: Map of the IMD Rank for LSOAs within the vicinity of the study area.

As a result of the high regional levels of deprivation within the large coastal towns, Lowestoft, Great Yarmouth and surrounding areas have been granted Assisted Area Status from 2014-2020 by the UK Government. Assisted Areas are defined under European state aid rules as “less economically advantaged places that would benefit from additional support for development”. This status enables additional financial aid to be provided by the Government, predominantly delivered to local businesses to support new investment. This is likely to provide significant benefits for the further development of the Great Yarmouth and Lowestoft Enterprise Zone and the energy sector located within the area.

Key Observation

Suffolk Coastal district’s economic performance is good, having closed its productivity gap with Ipswich and matched that of England as a whole. It has a sound basis to grow further through more investment in infrastructure. The more peripheral Waveney district experiences an entrenched and persistent productivity gap compared to the rest of England on a par with Northern regions of England. It follows that improved transport links such as SEGway that better connect the district with Suffolk Coastal, Ipswich and the rest of England will start to make a difference in closing that gap.

2.5.4 Structure of the economy

The Economic Strategy for Norfolk and Suffolk and the LEP’s previous Strategic Economic Plan (SEP) seek to deliver more jobs, new businesses, new housing, and increased productivity by 2036, building on a successful Norfolk and Suffolk economy that contributes £35 billion to UK plc, and where investment is made it delivers growth. Specific ‘high-impact growth’ sectors across the region include the following, with many of the growth opportunities involving collaboration and partnership between firms in different sectors:

- **Energy** – global expertise is found across all energy sectors, including oil and gas, nuclear generation and nuclear new build and the world's largest offshore windfarms in development off the East Anglian coast. This is all fed by a globally competitive renewables supply chain and support industry.
- **Life Sciences and Biotechnology** – international expertise in the fields of food, health and pharmaceuticals. In East Suffolk, this includes the world leading centre for marine science, innovation and research – Cefas, headquartered at Lowestoft.
- **Information Communication Technology (ICT) / Tech and Digital Creative** – including the world leading centre of innovation in communications technology at Adastral Park and Innovation Martlesham adjacent to the A12 near Ipswich
- **Advanced Agriculture, Food and Drink** employs over 10% of the workforce generating £2.2 billion per annum GVA. The region supplies food and drink to the country's supermarkets and the region's artisan products are a draw for visitors.
- **Financial Services and Insurance** contributes £3.1 billion per annum GVA or 13.4% of New Anglia's total and employs almost 21,000 people (3.2% of employment). As well as regional businesses, Ipswich hosts a concentration of both national and international insurance companies.
- **Visitor Economy – Tourism, Heritage and Culture**. This sector employs about 74,000 people. Tourism is worth £1.3 billion per annum in GVA to New Anglia, including the Broads (which extend into north eastern Suffolk) and the Suffolk coast and an underpinning by a strong cultural offer through festivals such as Aldeburgh and Latitude, both accessed via the A12.
- **Transport, freight and logistics (including ports).** These are worth £1.3 billion per annum to New Anglia and employ over 23,500 people. These include Ipswich, the country's largest port for grain export; Great Yarmouth and Lowestoft serving the North Sea energy sector; and Felixstowe as the UK's largest container port.
- **Construction and development** – a large and diverse construction and development sector including emerging specialisation in sustainable design.
- **Advanced manufacturing and engineering** – including national expertise in automotive, civil aviation, composites and pharmaceuticals.

The Business Register and Employment Survey (BRES) provides data on employment by industrial sector. **Figure 2-6** shows the percentage of total employees employed in broad industrial sectors in 2015 across the local authority areas of Suffolk Coastal, Ipswich and Waveney, and England as a whole.

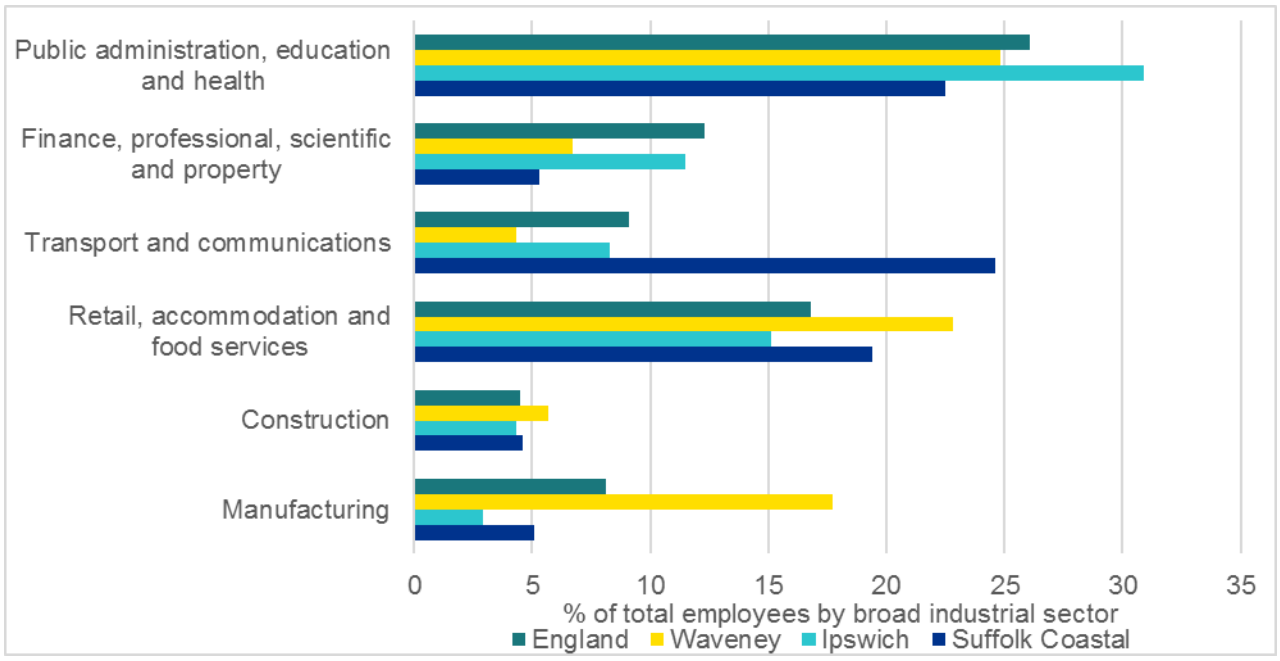


Figure 2-6: Employees by broad industrial sector, 2015. Source: BRES, 2015.

The BRES data indicates that Transport and communications makes up the largest employment sector within the Suffolk Coastal district, accounting for almost 25% of all employment in the region, significantly higher than the proportions in neighbouring districts and England as a whole. This likely reflects the importance of two key components of Suffolk's economy:

- High-tech business centres such as Adastral Park at Martlesham, which is BT's Global Research and Development Headquarters as well as a base for internationally significant companies such as Huawei, Alcatel-Lucent, Nokia Cisco and Intel
- The county's international Gateways (Felixstowe, Lowestoft, Ipswich) and the logistics operators that serve them and the region's businesses.

Comparatively the district of Waveney to the north of the proposed scheme, has a significantly higher proportion of its workforce within the manufacturing sector, likely reflecting the various businesses associated with the port of Lowestoft. This includes a significant proportion employed by the large offshore wind sector in the area either directly or as part of its supply chain, servicing the Greater Gabbard, Galloper and East Anglia wind farms off the Suffolk and Norfolk coasts.

Meanwhile, Ipswich to the south has a greater proportion of its workforce within professional, scientific, technical and other service sectors compared to neighbouring districts, reflecting its importance as an ever-growing business centre.

Both Suffolk Coastal and Waveney districts have higher proportions of their workforces employed in retail, accommodation and food services, indicating the relative importance of the tourism industry to the economies of these districts. In 2013 there were over 7.5 million trips made to Suffolk Coastal and Waveney districts, with a total direct visitor spend of £462million.[11] However, seasonality is a significant issue for employment in this sector, with the majority of tourist trips to the various destinations in the district made in the summer months, resulting in increased stress on infrastructure at these times.

Regarding annual numbers of new business starts, data are made available by the Office for National Statistics for the years 2011-2015 indicating that within Suffolk as a whole there were 3,045 new businesses across the year. Among the districts within Suffolk, the number of new businesses was also notably high in Ipswich (605) and Suffolk Coastal (560), both likely to benefit further from enhanced transport links as a result of SEGway.

Table 2-9 indicates that the number of new business starts within Suffolk and the districts within the area of impact of the SEGway scheme have risen across the five-year period from 2011-2015, indicating an increased recognition of the opportunities the region offers to entrepreneurs and new businesses.

Geographical Area	2011	2012	2013	2014	2015
Suffolk	2,495	2,400	3,095	2,495	3,045
Suffolk Coastal district	435	430	495	435	560
Ipswich borough	425	430	540	520	605
Waveney district	330	305	435	395	365

Table 2-9: Enterprise Births by year, 2011-2015 Source: ONS Business Demography 2015

2.5.5 Growth Opportunities

In addition to the proposed construction of Sizewell C (provided in brief summary herein with more detail in sections 3.2 and 11.1.3), both the East Suffolk Growth Plan[12] and the Economic Strategy for Norfolk and Suffolk identify a number of economic sectors, and specific sites based around these sectors, which are of particular importance to the regional economy. These are considered to be of critical importance in enabling future economic growth in the region through increased wealth creation and enhanced employment opportunities.

[11] Economic Impact of Tourism Reports for Suffolk Coastal and Waveney, 2015, referenced in the East Suffolk Tourism Strategy 2017 to 2022
[12] East Suffolk Growth Plan 2014-2025, Suffolk Coastal District Council & Waveney District Council, August 2014

Suffolk is home to one existing and one planned Enterprise Zone, delivering a range of benefits to companies, including business rate discounts, simplified planning processes and superfast broadband access. The Great Yarmouth and Lowestoft Enterprise Zone located at the centre of the east of England's 'all-energy coast' was designated as an Enterprise Zone by the UK Government in 2015, focusing on its status as a centre of excellence for energy production and distribution in the UK. Four of the six sites associated with this zone are situated within Suffolk, at Ellough Business Park, Mobbs Way, Riverside Road and South Lowestoft Industrial Estate.

A second Suffolk Enterprise Zone has recently been established in six locations, focusing on key sectors for innovation and supply chain expertise, including agri-tech, food and health, offshore energy, ICT and digital and creative sectors and the Green Economy.

Suffolk's Energy Coast

EDF Energy is proposing to construct a new nuclear power station at Sizewell, known as Sizewell C, comprising two reactors, immediately to the north of the existing single reactor Sizewell B power station. This location was identified in 2011 by the Government's National Policy Statement for Nuclear Power Generation *(2011)*[13] as a potentially suitable site for a new nuclear power station because of its proximity to an existing power station (Sizewell B), the North Sea and its relatively isolated location.

EDF Energy undertook its Phase Two Consultation in 2016. EDF Energy is still to undertake its Stage 3 consultation for Sizewell C, followed by a period of time to develop and submit a Development Consent Order, moving to the examination, possible approval and Final Investment Decision, before construction can commence. This timetable needs to be considered alongside the timetable for the construction of SEGway.

Sizewell C's construction workforce is expected to involve 25,000 different roles over the lifetime of the project. This includes a peak of approximately 5,600 people plus another 500 off-site staff. A permanent operational workforce of around 900 personnel would build up over the course of the construction phase to run the station post-commissioning. The construction workforce equates to 7% of the current Suffolk Coastal District's current entire workforce.

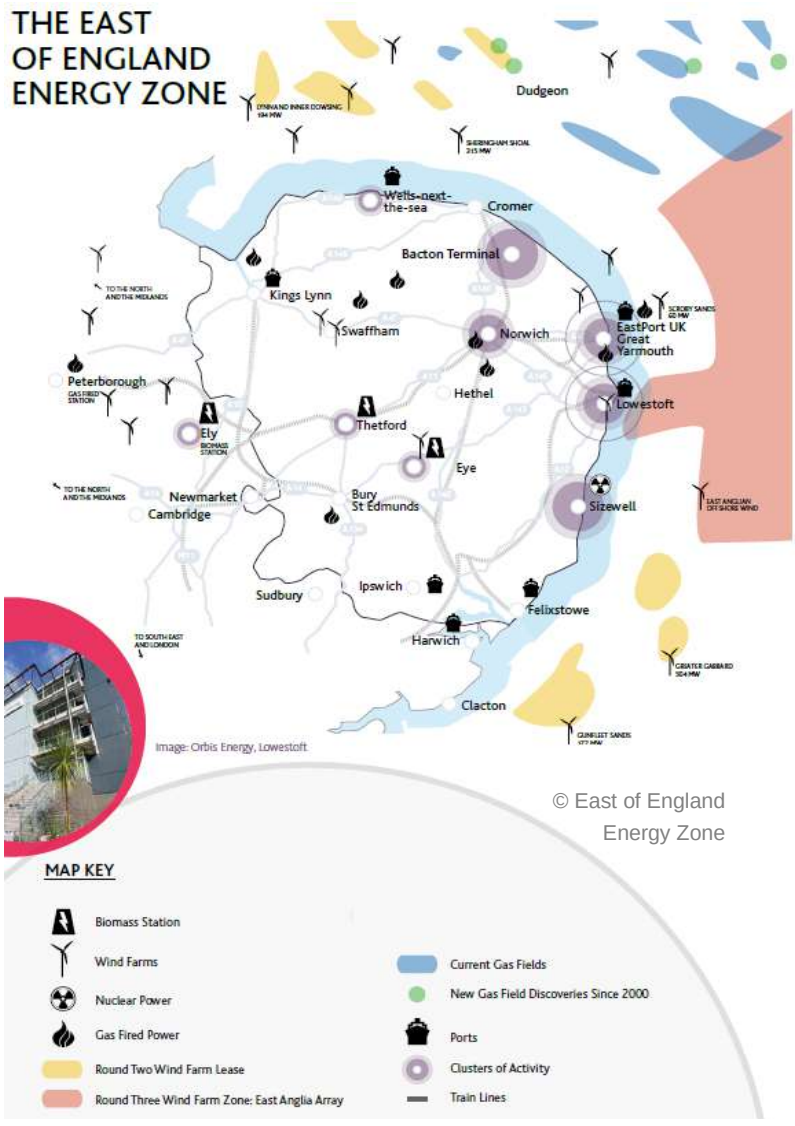


Figure 2-7: Map of the East of England Energy Zone. Source: EEEZ

Norfolk and Suffolk and the East Suffolk coastline in particular have over 50 years' experience in the offshore energy sector, originating from the exploration of North Sea oil and gas in the 1960s (**Figure 2-7)**. The energy sector is currently worth £1 billion GVA to Norfolk's and Suffolk's economy and employs 7,700 people, with £50

[13] Department for Energy and Climate Change, National Policy Statement for Nuclear Power Generation, July 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47859/2009-nps-for-nuclear-volumeI.pdf, accessed 10 December 2017

billion investment in the sector expected over the next two decades. The energy sector is currently one of the region's most productive, with a GVA per job of £126,000.[14]

Given the expertise in the offshore energy sector and the infrastructure present, the East of England Energy Zone (EEEZ) was established by a partnership of regional business and Local Authorities to facilitate future investment and development of the sector.

This EEEZ includes the Great Yarmouth and Lowestoft Enterprise Zone, also designated as a national Centre for Offshore Renewable Engineering (CORE), which provides further excellent conditions for the development of offshore wind projects. OrbisEnergy, situated in Power Park Lowestoft, also plays an important role in the progression of the sector as a specialist regional innovation centre for offshore renewable energy and supply chain development.

As shown in **Figure 2-7**, the majority of companies involved in the offshore wind supply chain are located along the East of England Energy coastline. Lowestoft has also been selected as the construction base for Galloper Wind Farm and as both a construction and operations and maintenance hub for the £2 billion, 102-turbine East Anglia ONE development comprising part of the East Anglia Array. Scottish Power has noted that the East Anglia ONE development has the potential to develop 3,000 new jobs.

Also related to the EEEZ is the Centre for Environment, Fisheries and Aquaculture Science (Cefas) – a world leader in marine science and technology with its headquarters in Lowestoft. It provides solutions for the aquatic environment, biodiversity and food security. It works with sectors which Lowestoft and Suffolk act as hubs for, including offshore renewable energy, oil and gas and nuclear energy. In October 2017, Cefas received planning permission to redevelop its headquarters site in Lowestoft, with £16 million of investment in new and refurbished office and laboratory facilities to create a leading centre for applied science, with completion of the works scheduled for March 2019.

The UK's Fisheries Minister – George Eustice has stated: *"Cefas has always been at the forefront of marine research and innovation, and I'm pleased this new centre is one step closer to reality. Once complete it will help bolster our research and understanding of sea life – solidifying our positon as a world leader on marine science and a champion of sustainable fishing".*[15]

Tourism

The Suffolk tourism industry is considered a highly important part of the regional economy and another key sector for the LEP. The tourism sector has grown consistently in East Suffolk for the past twenty years and has outstripped the rate of tourism growth at the national level. In 2013 there were over 7.5 million day trips and 2.5 million overnight stays in the Suffolk Coastal and Waveney districts. The total direct spend from visitors was £462 million, adding £590 million to the local economy and supporting the employment of over 12,500 individuals.[16] However, the ability of the tourism sector to grow and develop depends to a great extent on the safeguarding of the area's tourism assets and also importantly, on the ease of access to the area. The growing population in the Greater London area and Suffolk's expanding population present an increasing market for East Suffolk's attractions.

Figure 2-8 shows the location of tourist destinations within the area. Important destinations accessible from the A12 include coastal resorts such as Great Yarmouth, Lowestoft, Kessingland, Southwold and Aldeburgh with specific attractions including Adnams Brewery, the Broads National Park, the Suffolk Coast and Heaths AONB, Framlingham Castle, Leiston Abbey, Orford Castle, Sutton Hoo, Dunwich, RSPB Minsmere, Snape Maltings art complex, the annual Latitude, FolkEast Festivals and the Suffolk Coast Path. Beyond these principal locations there are a wealth of secondary tourist sites across the region accessed from the A12, including Rendlesham Forest, Africa Alive and RSPB Boyton, further bolstering Suffolk's tourist offering.

[14] New Anglia LEP, Economic Evidence Report (Updated), p. 126, December 2017, https://newanglia.co.uk/wp-content/uploads/2017/12/2017-12-05-FINAL-Economic-Evidence-Report-single-pages-HighRes.pdf, accessed 8 December 2017
[15] A new era for marine science: green light for new Cefas headquarters in Lowestoft, Cefas Press Release, 13 October 2017
[16] Economic Impact of Tourism Reports for Suffolk Coastal and Waveney 2015, referenced in the East Suffolk Tourism Strategy 2017 to 2022

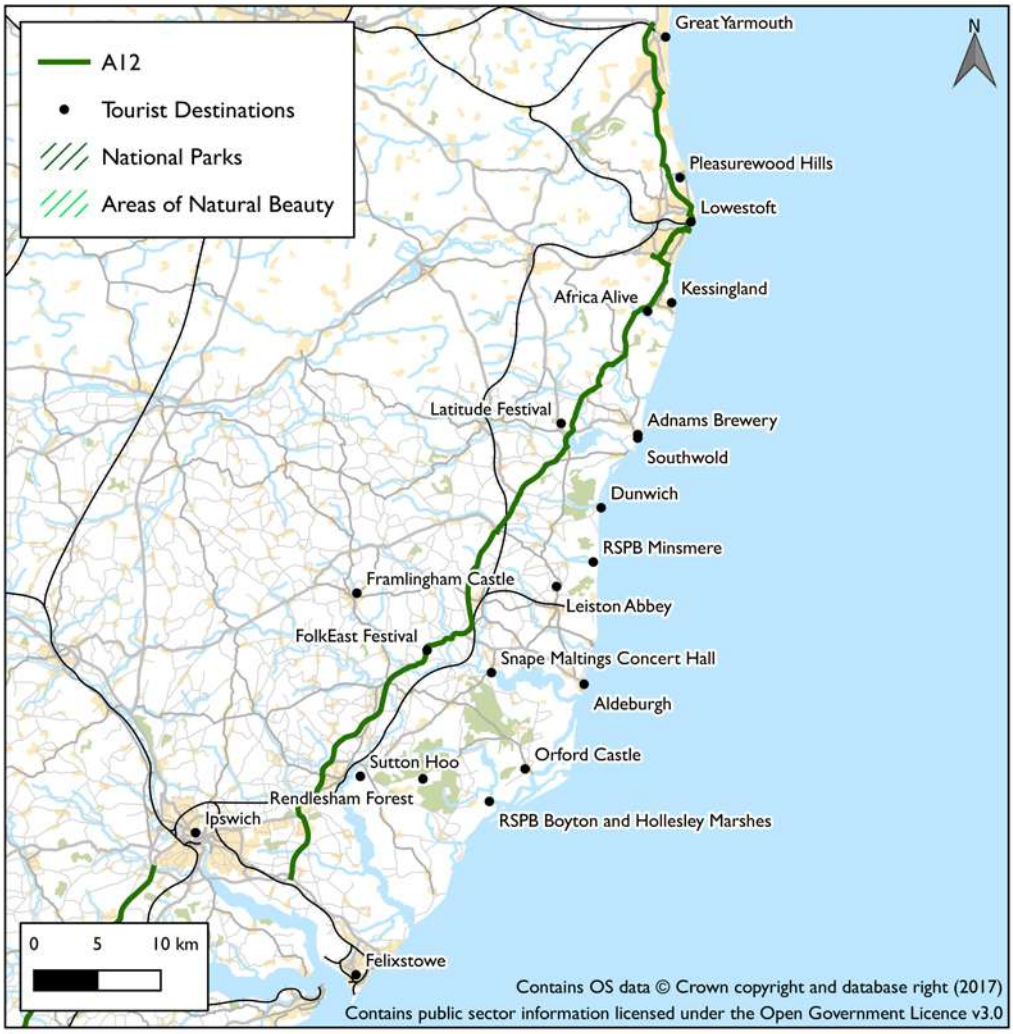


Figure 2-8: Location of the majority of key tourism destinations within East Suffolk

Specific features of the tourist economy, namely the Suffolk Coastline, Food and Drink, and Festivals are now described in turn.

Suffolk Coastline

The 2015 Destination Research report[17] commissioned by Visit Suffolk identified the Heritage Coast of East Suffolk as one of the top tourist destinations, with the coast noted as one of the best things about Suffolk. Coastal towns such as Aldeburgh and Southwold represent 'market towns by the sea' whilst Felixstowe and Kessingland are more traditional seaside resorts. Southwold in particular is known for its iconic pier and lighthouse and the famous Adnams' Brewery which exports ales and other alcoholic beverages internationally.

The Suffolk Coastline also has a good network of walking routes, with three established long distance trails and a series of shorter trails. It is estimated that the Suffolk Coastal and Heaths AONB alone is worth £190 million per year in direct contributions to the local economy, with a further £44 million being generated through indirect spend. This supports an estimated 3,599 Full Time Equivalent (FTE) jobs.

[17] Visit Suffolk Market Segmentation, Destination Research Ltd, 2015, https://www.suffolk.gov.uk/assets/planning-waste-and-environment/suffolks-countryside-and-wildlife/Visit-Suffolk-Market-Segmentation-2015-FINAL-Report.pdf accessed 14 December 2017

Investment in projects along the East Suffolk coastline is important to continue to attract tourists, ensuring the maintenance of current attractions and creation of new destinations for visitors. In 2016 the Lowestoft Coastal Community Team received a £997,901 grant from the UK Coastal Community Fund, to transform a currently semi-derelict green space and seafront promenade at Ness Point, Britain's most easterly point, into a visitor destination that celebrates its cultural heritage and location.

The 2015 Destination Research report also identified the A12 (which should be acting as a gateway to tourism opportunities) as one of the worst things about Suffolk (further information in Section 2.8.2). Case studies suggest that road improvements can generate tourism-related economic benefits as tourism businesses widen their catchment area owing to the enhanced accessibility, something recognised in the New Anglia SEP.

Food and drink

Suffolk has a strong offering of locally distinctive foods/produce and nationally renowned producers, with products such as Suffolk Pork and local names including Dingley Dell Farm, Stokes Sauces, Broxtead Estate/Suffolk Food Hall and Jimmy's Farm providing a strong tourist offering. The region is also known for its abundance of high quality local pubs, restaurants and artisan shops set within some of Britain's best landscapes. Suffolk Coastal and Waveney Councils' have teamed up to produce several East Suffolk Food Trails, allowing tourists to better discover this breadth of offerings available across the district.

The thriving food and drink and agriculture industries have a strong reliance on the A12. It provides the means for goods deliveries to the country's supermarkets from key local businesses, farms and artisan providers, and access to the UK's largest port for grain export - the Port of Ipswich to the south, as confirmed by the DfT Port Freight Statistics.[18] Its owner, ABP has invested more than £5.4 million in 2016/17 in new facilities at Ipswich, with volumes at the Port of Ipswich growing year-on-year since 2013.

ABP short sea ports director Andrew Harston said: "Our 2016 figures are yet another positive indicator of the importance of the Port of Ipswich to the broader East Anglian economy. An 8% increase in ship calls is a testament to the efforts of our staff and customers who are striving to continually grow their businesses. We are now looking forward to improving this result again in 2017."[19]

Festivals

The Suffolk Coastal region has a comprehensive programme of events and festivals which run roughly from March to November, although concentrated around the summer months. The range and quality of these festivals and events is considered a key driver of additional tourist visits to the region, with those outside peak summer months particularly important in creating new business during the off season. **Table 2-10** displays some of the multitude of festival offerings currently running within the district.

Name	Description	Location	Months
Music			
Aldeburgh Festival	17 days of classical music	Snape Maltings	June
Maverick Festival	Roots and americana	Easton Farm Park	June
Latitude Festival	Music, literature, comedy, theatre, dance and poetry. Twice winner of the UK Festival Award for Best Line-Up	Henham Park	July
Snape Proms	30 nights of classical music with international performers.	Snape Maltings	August
FolkEast	Folk music, food and crafts	Little Glemham	August

[18] https://www.gov.uk/government/statistics/port-freight-statistics-2016-final-figures, September 2017 & http://www.abports.co.uk/Our_Locations/Short_Sea_Ports/Ipswich/, accessed 8 December 2017

[19] http://www.ipswichstar.co.uk/news/associated-british-ports-hails-record-year-for-the-port-of-ipswich-1-4900140, accessed 8 December 2017

Name	Description	Location	Months
Food			
Jimmy's Sausage and Beer Festivals	Sausages and beer from the award winning farm and live music	Jimmy's Farm, Belstead	July
Aldeburgh Food & Drink Festival	A weekend of tasting, talking about and discovering East Anglian produce	Aldeburgh	September
Woodbridge Shuck	Shellfish festival	Woodbridge	September
Framlingham Sausagefest	Autumn sausage festival, including workshops, activities and entertainment	Framlingham	October
Arts and Literary			
Aldeburgh Literary Festival	Talks and readings by a range of top writers.	Aldeburgh	March
Ink Festival	Brand new works of theatre, films and live music	Halesworth	April
Southwold Arts Festival	A week-long showcase by artists, poets, writers, actors and musicians	Southwold	June
Felixstowe Book Festival	One of the newest book festivals in Suffolk	Felixstowe	July
Hightide Festival	10-day festival of new theatre	Aldeburgh	September
Halesworth Arts Festival	Top quality artists in small, intimate surroundings	Halesworth	October

Table 2-10: Major festivals and events in the Suffolk Coastal region. Source: visitsuffolk.com

Some of the most successful of these include Aldeburgh Music Festival, which attracts around 100,000 visits per year to its performances, with approximately 40% of those estimated to travel from outside the area, and Latitude Festival, which attracts 35,000 visitors annually from across the UK. The Snape Maltings creative campus is also notable for the wide variety of nationally renowned concerts and festivals it plays host to, as well as numerous art exhibitions, independent shops and its location within the Suffolk Coast & Heaths AONB.

However, the success of the region's festivals and the increase in events during the summer months since 2006, has attracted large numbers of visitors and put significant pressure on the road network. This is most notable on the A12, which handles the majority of the traffic destined for the events. The congestion causes significant impacts to local residents and businesses who rely on the A12 to travel for work and leisure purposes, and also affects deliveries and freight.

Key Observation

The New Anglia LEP identifies Suffolk's Energy Gateway new road as a key factor for driving growth in the local economy, including maximising the potential of the energy, life sciences and biotechnology, ICT, visitor economy, agriculture, food and drink and the transport, freight and logistics sectors. This is reinforced by further evidence presented by the East of England Energy Zone and Destination Research Report on Tourism, and backed by our own research and analysis.

2.6 Transport network

2.6.1 Road network

The A12 is the major north-south highway and most important transport link in East Suffolk, linking Ipswich and Lowestoft and providing connectivity to the A14 and A47, with access to London, the Midlands, Europe and beyond. The A12 along the section between the urban boundaries of Lowestoft and Ipswich has a series of secondary A and B distributor road links to towns, villages and tourist attractions.

Travelling north to south this includes amongst others; Kessingland Beach (B1437); Southwold (B1127, B1126 and A1095); Beccles and the Broads National Park (A145, B1127); Walberswick and Dunwich (B1125 and B1387); Halesworth (A144); Dennington and rural areas of central Suffolk (known as “The Tourist Route” A1120); Leiston and Sizewell (B1122); Saxmundham and Framlingham (B1119); Aldeburgh, Leiston and Snape Maltings (A1094); Orford and Wickham Market (B1078), Framlingham (B1116); Melton and Rendlesham (A1152); Woodbridge (B1079 and B1438); Martlesham (B1438); Martlesham Heath (various unclassified distributor roads); and Kesgrave, Ipswich and its eastern park and ride scheme (A1214).

Moving to the specific section between Saxmundham and Wickham Market, this section of the A12 runs through or close to the communities of Farnham, Stratford St. Andrew, Little Glemham and Marlesford. It is a 4 ½ mile stretch of single carriageway road between two dual carriageway sections of the A12 that end at the junctions with the A1094 and B1078 respectively. It is a narrow and winding road, subject to speed limits (30 mph or 40mph) through the communities. In addition, there are fifteen side roads along its length, which lead to queuing and congestion from local traffic turning in and out of these roads. This section of the A12 does not meet current design standards with regards to both its alignment and capacity for the volume of traffic it now carries.

Road users have little alternative to the A12 for north-south movements. Alternatives are either substantially longer and / or inferior quality:

- The A140 / A143 route between Ipswich and Lowestoft via Beccles is some 9 miles (15 km) longer.
- The A1120 between the A140 to the northwest of Ipswich and A12 is signed as a tourist route, and is of lower standard.
- The A1152 / B1069 route between Woodbridge and the A1094 is only of ‘A’ road standard as far as the former US Airforce base at Bentwaters, with the B1069 of inferior quality and lower speed limits resulting in slower journey times (typically 5 minutes slower based on Google Maps at off peak times) in comparison to the A12 route to the west – see **Figure 2-9** below.
- Most motorised vehicle users at off peak times are only likely to travel along the full length of this route to visit local destinations such as Sutton Hoo, Tunstall Forest and Snape Maltings on route.

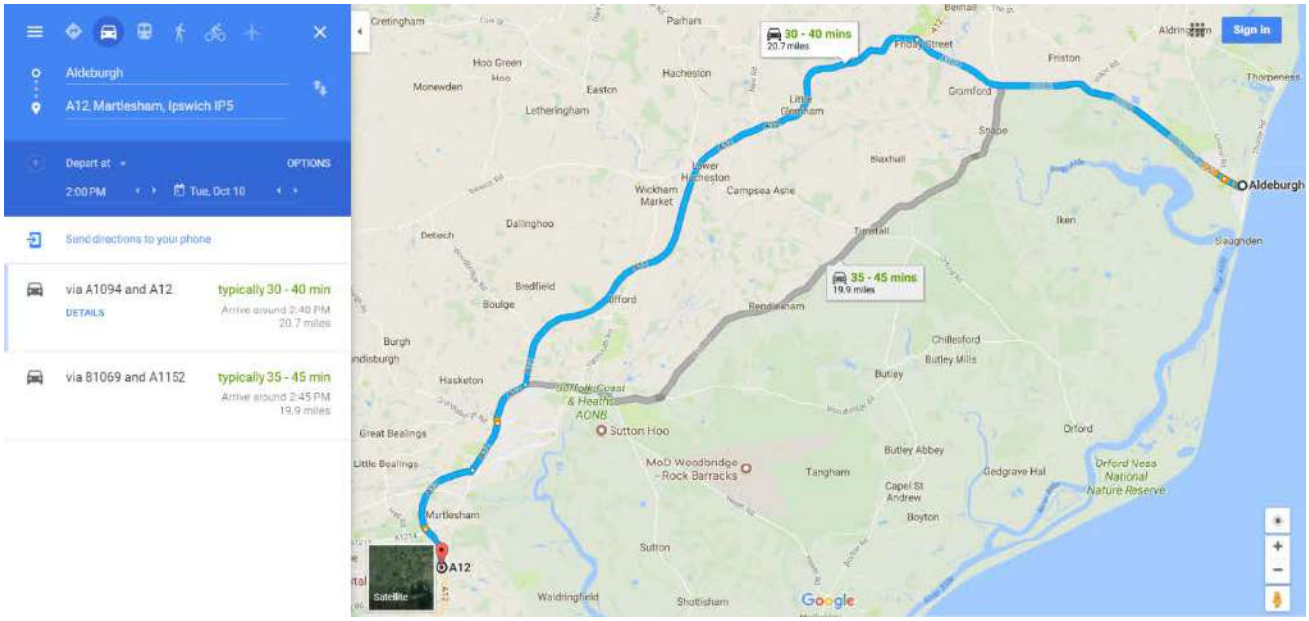


Figure 2-9: Off-peak journey options – A12 vs A1152/B1069. Source: Map Data – Google Maps, 5 October 2017.

Key Observation

The A12 is the main transport link in the area. It caters for both local and strategic traffic. It is an important feeder link to a large number of secondary A and B roads. Alternatives are slower and of lower quality.

2.6.2 Bus services

Bus and rail services in the area are shown in **Figure 2-10**. Their frequency is shown in **Table 2-11** (next page).

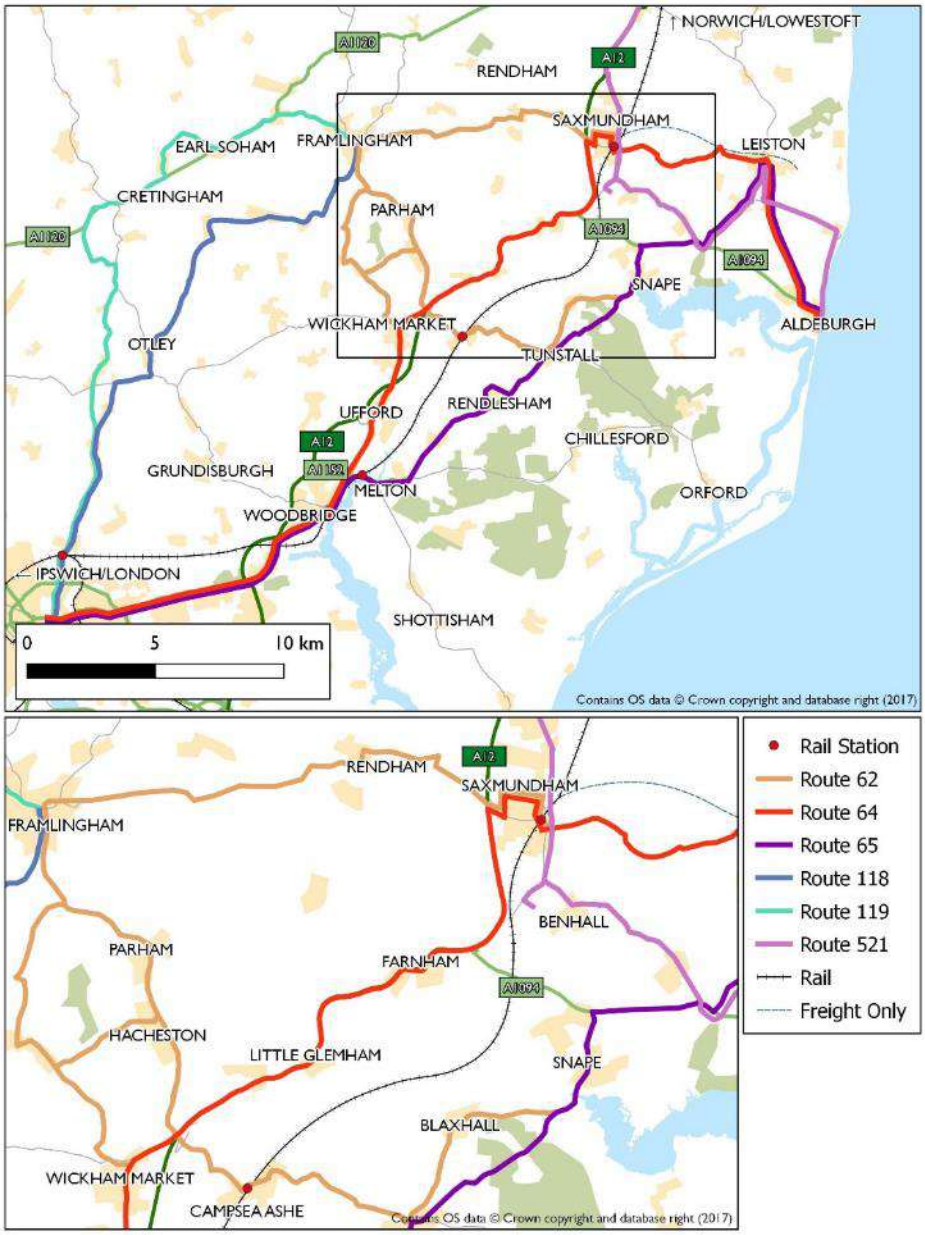


Figure 2-10: Map of local bus and rail services along the scheme section of the A12.

This section of the A12 is served by First in Norfolk & Suffolk supported by Suffolk County Council. The Four Villages along the section of the A12 are all served directly by the route 64, whilst the 65 parallels this along the A1152 and B1069 to the southeast. Neighbouring communities such as Framlingham are also linked by bus to Ipswich through routes that do not use the A12. Services on both 64 and 65 operate approximately every two

hours through most of the day, with the exception of weekday peak times on route 64 when the service is hourly. Other services (routes 62 and 521) are less frequent and more circuitous.

Service	Operates between	Operator	Monday - Friday		Saturday	Sunday & Bank Holiday
			Peak	Off-Peak		
64	Leiston, Woodbridge, Ipswich	First	Hourly	Every 2 Hours	Every 2 Hours	No Service
65	Aldeburgh, Woodbridge, Ipswich	First	Every 2 Hours		Every 2 Hours	Every 2 Hours
118 / 119	Framlingham, Ipswich via Earl Soham or Otley	Galloway European	Irregular, generally every 60 – 90 minutes between Framlingham and Ipswich alternating between routes			No Service

Table 2-11: Principal bus services serving the immediate study area

Key Observation

The section of the A12 is served by one bus route, with a second running along a parallel route to the southeast. However, services are infrequent and the percentage of people using the bus to travel to work is significantly lower than the national average.

2.6.3 Rail

The immediate study area is served by two main railway stations, Wickham Market (in the neighbouring village of Campsea Ashe) to the southwest and Saxmundham to the northeast as shown in **Figure 2-10**. These are situated on the East Suffolk Line and are operated by Greater Anglia.

Both stations are served by an approximately hourly basis in each direction following the installation of a passing loop at Beccles, complementing other sections of double track on the line. Northbound services from Saxmundham call at Darsham, Halesworth, Brampton, Beccles, Oulton Broad South and Lowestoft. Southbound services from Wickham Market call at Melton, Woodbridge and Ipswich. The journey between Ipswich and Lowestoft currently takes on average around 1hr 30mins, demonstrating the poor connectivity that currently exists between the two settlements, which could be enhanced by the SEGway scheme.

Facilities at Wickham Market and Saxmundham Stations include:

- Cycle parking for a limited number of cycles within the car park and on the platform at Wickham Market Station and on the platform at Saxmundham Station.
- No open ticket office facilities at any time at either station although Wickham Market has a station café and shop.
- Car parking spaces for 48 vehicles at Wickham Market and 18 vehicles at Saxmundham. Car parking is free of charge.

Table 2-12 and **Table 2-13** show annual station entries and exits over the last five years, at Wickham Market and Saxmundham respectively. The tables show an overall increase in passenger numbers although more modest growth since 2013/14

Year	Total entries & exits	Percentage growth from previous year
2011/12	32,856	-
2012/13	38,900	18%
2013/14	44,270	14%
2014/15	43,804	-1%
2015/16	44,332	1%

Table 2-12 : Railway station patronage – Wickham Market

Year	Total entries & exits	Percentage growth from previous year
2011/12	122,400	-
2012/13	132,418	8%
2013/14	139,254	5%
2014/15	139,246	0%
2015/16	147,346	6%

Table 2-13 : Railway station patronage – Saxmundham

North of Saxmundham a single track freight only line joins the East Suffolk Line, providing a connection to the transhipment yard for nuclear waste trains from Sizewell power station to the east of Leiston. The line's former passenger services to Aldeburgh, Thorpeness and Leiston were withdrawn in 1966.

2.6.4 Walking, cycling and horse riding

Traffic volumes on the A12 corridor through the Four Villages makes non-motorised forms of transport less attractive and contributes to community severance. In theory residents of Farnham and Stratford St. Andrew should be able to make use of shared facilities in both settlements given their close proximity. However, there is only a continuous footway on the south side of the road between the two villages and crossing facilities are limited to low cost traffic islands (to provide durability given the presence of wide vehicles) at various locations. Consequently, local residents have reported driving from Farnham to facilities in Stratford St Andrew due to the difficulty crossing the road and feeling unsafe on the narrow footways.

Key community facilities of note are:

- A large, modern, village hall, (the Riverside Centre) and adjoining recreational facilities, is shared by Farnham and Stratford St Andrew, but is not comfortably accessible on foot by residents of Farnham.
- A combined petrol station and convenience store, and neighbouring antiques shop is located in Stratford St Andrew close to the Riverside Centre.
- St Mary's Church, Farnham.
- A small industrial estate at Farnham, located on the outside of Farnham Bend, which is difficult to access on foot.
- A network of public rights of way (PROW) from Farnham Village to Foxburrow Wood used for dog walking and recreation.

Figure 2-11 illustrates an aerial view of Farnham, including the 'Farnham Bend', and Stratford St Andrew, through which the A12 corridor cuts.

Figure 2-11: Community facilities and severance: Stratford St. Andrew and Farnham (source: Imagery: DigitalGlobe, November 2017, Map Data: Google Maps, November 2017)

Little Glemham has separate community facilities, although with the A12 running through the village, roughly half of the village's residents have to cross the busy A12 to access them:

- Parish Rooms on Church Road provide another local community venue.
- St Andrew's Church, Little Glemham, is well to the east of the A12.
- Lion Inn at Little Glemham. It is a popular local venue but roughly half of the Little Glemham's residents have to cross the busy A12 to access it.

Marlesford village is spread out with some homes on the south side of the A12 and others including the village's church located some 500 metres to the north on the unclassified Hall Road. Community facilities of note include a village church in the northern part of the village and a farm café, shop and antiques centre alongside the A12 to the south.

The level of motorised traffic also dissuades people from cycling along the A12. May 2017 counts revealed just 6 cyclists using the A12 between 0700 and 1900, with all of these being recorded in the evening peak hour.

Figure 2-12 displays the network of national and regional cycle routes in the vicinity of the scheme. Regional Cycle Route 41 crosses the A12 to the south of Stratford St Andrew providing a signed link between National Cycle Route 1 which runs north-south further inland and the coast (Orford and Dunwich). Weekday usage of this route is also very low, with 4 cyclists recorded at its junction with the A12 in May 2017.National Cycle Route 1 also forms part of the international North Sea Cycle Route which runs traverses all of East Anglia as part of a longer route which runs from the UK through to northern mainland Europe including Belgium, Netherlands, Denmark, Sweden and Norway. This could form an additional tourism draw with improved promotion and accessibility.

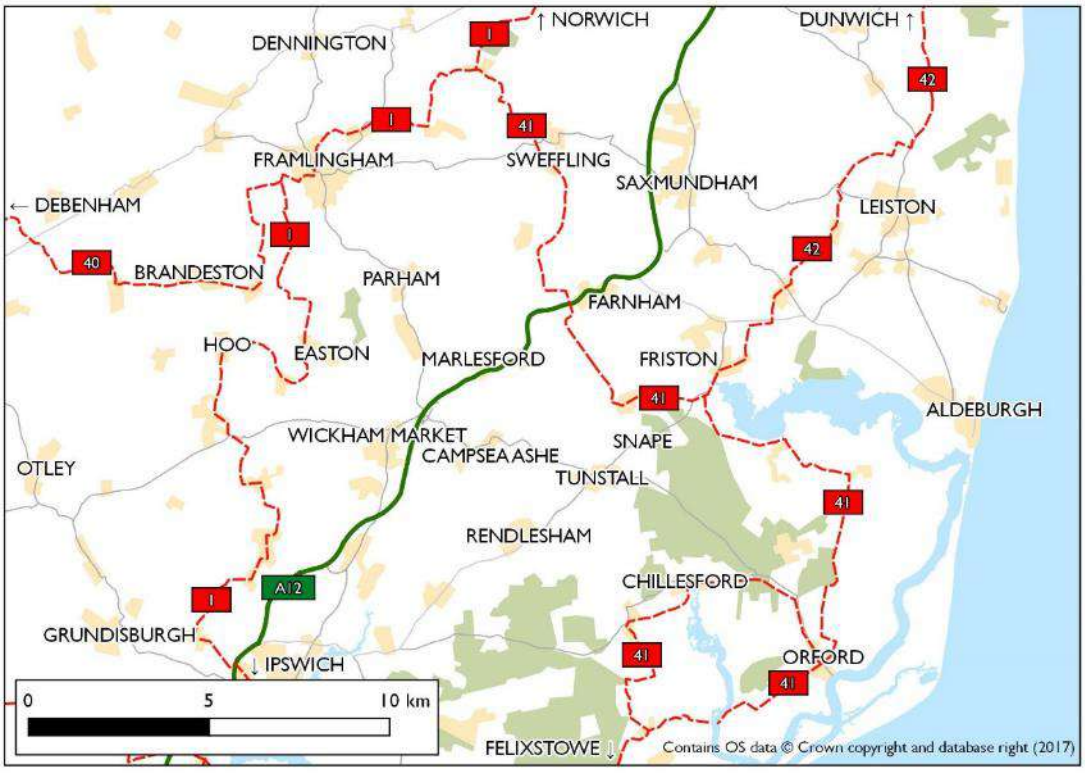


Figure 2-12: National and regional cycle routes in the vicinity of the scheme area.

An assessment of existing and potential equestrian facilities has identified that no current bridleways are crossed by the proposed scheme options and the minor roads that cross do not appear to be used for horse-riding.

The assessment did identify several bridleways and byways in the local area that could be used in conjunction with the lightly trafficked local roads for circular horse-riding trips, as well as the nearby Tunstall Forest and

Rendlesham Forest located at the edge of the study area, which are also popular for horse-riding. Several stables and livery services were also recorded in the vicinity, including Glevering Hall Farm, Plunketts Equestrian Services, Tunstall Forest Livery and Valley Farm Equestrian Leisure.

Key Observation

Pedestrian access to facilities and services within the Four Villages is hindered by the busy A12. The level of traffic through the Four Villages also results in very low numbers of cyclists from using the A12 or crossing it via local junctions. This dissuades leisure cyclists from visiting the immediate study area on journeys to and from NCR 1 and the North Sea Cycle Route (Route 41/42).

No bridleways are crossed by the proposed scheme options and the lightly trafficked side roads that connect with the A12 do not appear to be well used for horse riding. With a number of equestrian facilities and forests nearby, the potential for circular trips to take in the old A12 and side roads would increase with construction of a new alignment.

2.7 Route performance

This section provides an overview of the following:

- Travel patterns for all purposes, commuting and visitors to the area
- Traffic volumes including annual average daily traffic flows, seasonal and hourly variability
- Speeds and journey times
- HGV flows
- The "Farnham Bend"
- Accidents

2.7.1 Travel patterns

The Suffolk County Transport Model (SCTM) makes uses of observed mobile phone data to derive matrices of travel demand. WSP, acting as consultants working on behalf of Suffolk County Council, have analysed the 2016 baseline model to demonstrate the distribution of trip lengths on the A12 in the study area for both the AM and PM peak area. This profile is shown below in **Figure 2-13** which shows that the majority of trips are between 15 and 80km in length. This indicates that the road is used for a variety of types of journey, ranging from local to regional in distance.

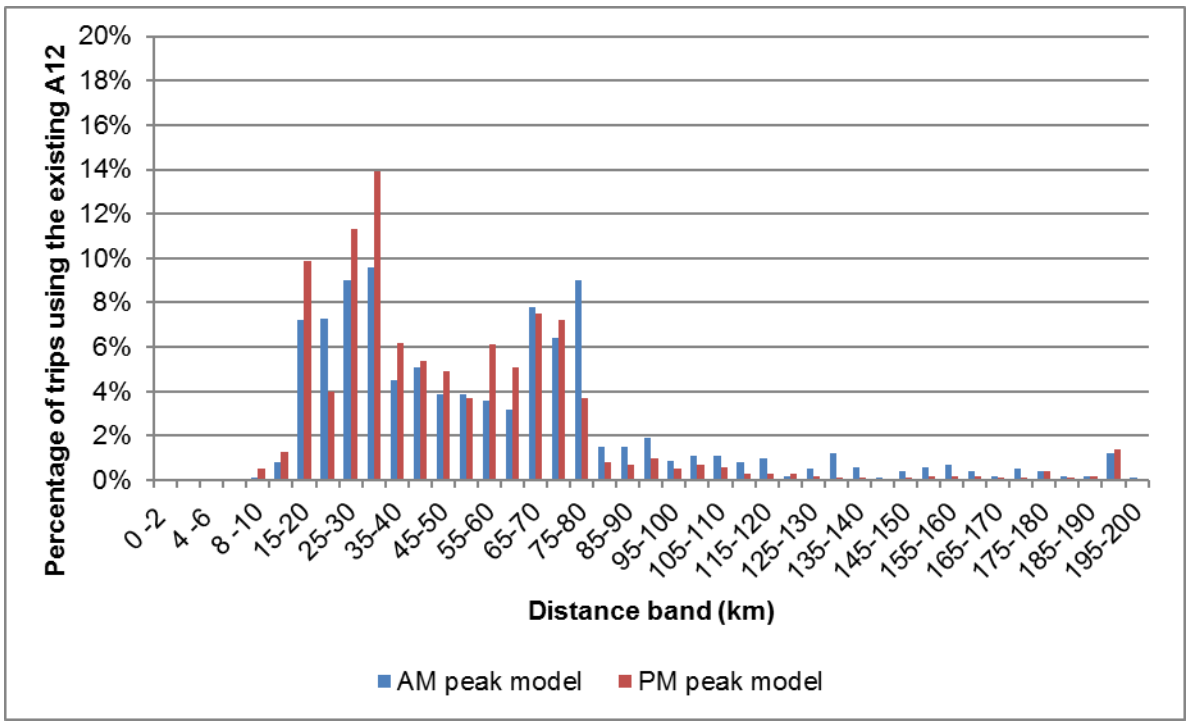


Figure 2-13 : Distance profile of existing traffic demand on the A12 in the Four Villages Study Area, WSP – 2016 Suffolk County Transport Model Matrices

To help put these figures into perspective, the following are distances between key locations in East Suffolk: Ipswich and Woodbridge 9 miles (14.5 km); Ipswich and Saxmundham 22 miles (35.5 km); Ipswich and Aldeburgh 26 miles (42 km); Ipswich and Southwold 35 miles (56 km); Ipswich and Lowestoft 45 miles (72 km). Trips longer than this are to or from Essex, Norfolk, Cambridgeshire, Greater London, the Midlands and beyond.

2.7.2 Commuting patterns

Section 2.4 provided an overview of the Census journey to work dataset at the district level. This dataset has been further analysed to show the principal southbound commuting destinations for residents located in Suffolk Coastal District Medium Super Output Areas (MSOAs) covering Blythburgh / Walberswick, Saxmundham, Leiston and Aldeburgh and Waveney District that could involve the use of the A12. For all destinations other than the longer distance destinations such as London, the majority of these journeys are made by residents of

the part of Suffolk Coastal District likely to be impacted by the proposed scheme. Few journeys are made from Great Yarmouth (e.g. 10 journeys to work between Great Yarmouth and Ipswich) and these could be made by alternative if similarly, slow routes, and so these are not included in the analysis.

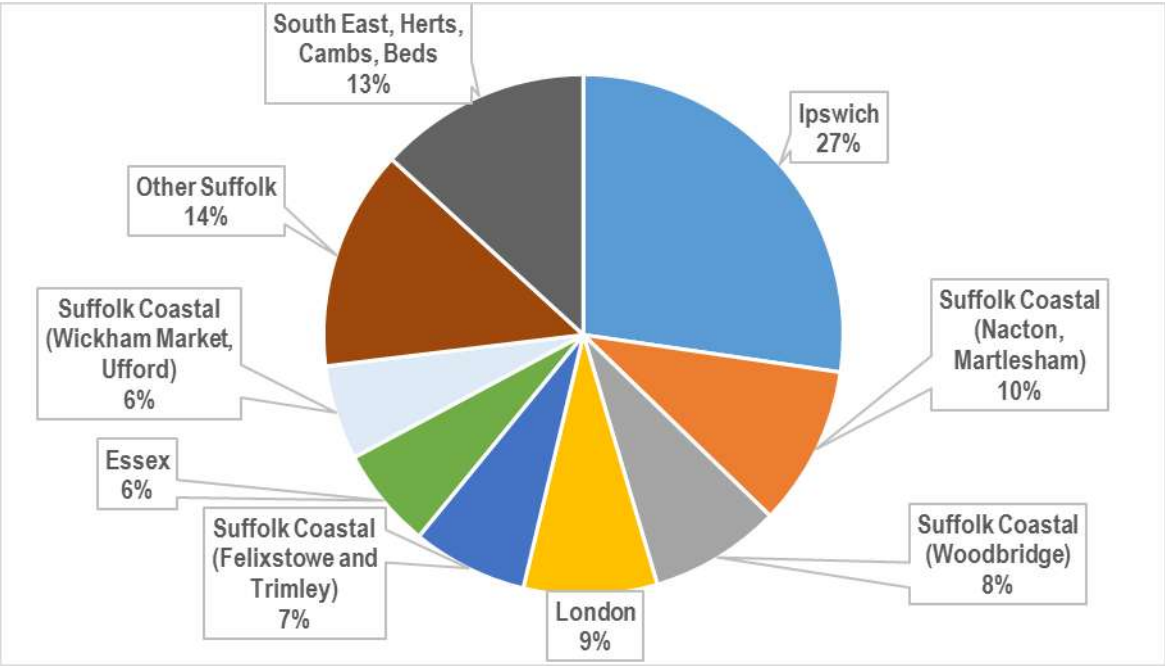


Figure 2-14 : Destination of southbound journeys to work by car likely to use the A12 between Farnham and Marlesford, Census 2011 Dataset - WU03EW. Sample Size 2656 Journeys by car

Similarly, the Census has been analysed to understand the origins of northbound journeys to work likely to be using the A12 between Marlesford and Farnham. Interestingly, 50% of these journeys are destined for the MSOA covered by Aldeburgh, Leiston and Sizewell.

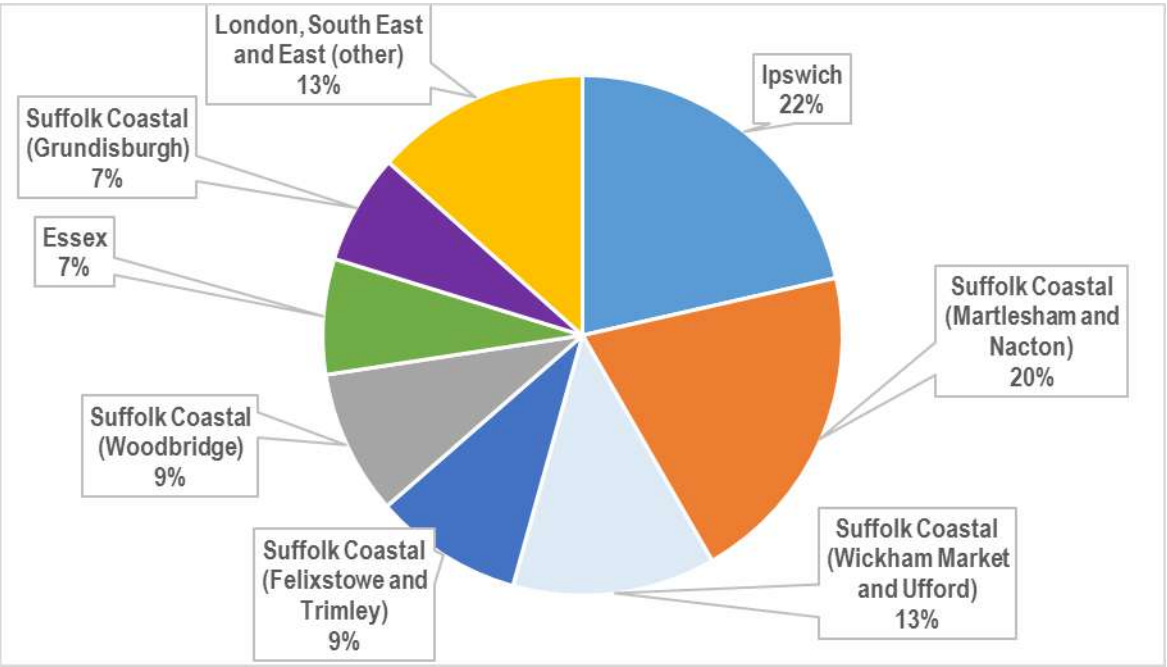


Figure 2-15 : Origin of northbound journeys to work by car likely to use the A12 between Marlesford and Farnham, Census 2011 Dataset - WU03EW. Sample Size 1288 journeys by car.

However, there is a strong imbalance in flows north and south as the summary graphic in **Figure 2-16** illustrates.

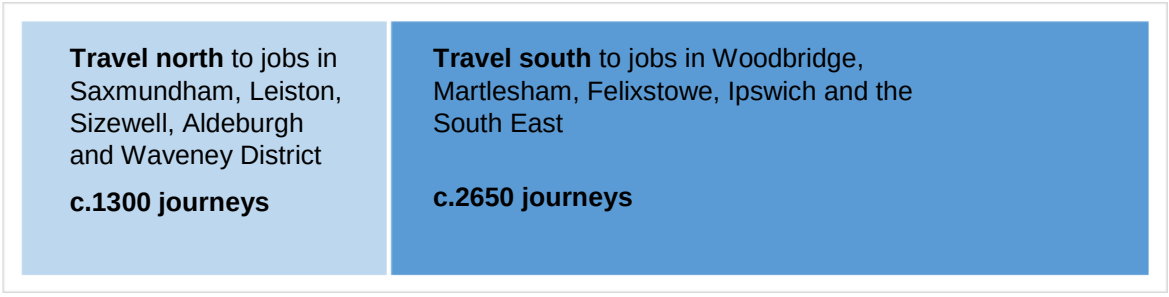


Figure 2-16 : Imbalance in commuting flows on the A12 – Census 2011 Dataset – WU03EW

Key Observation

The strong draw of employment in Ipswich and Martlesham versus the weaker pull of Lowestoft and the smaller towns between there and Farnham results in a strong imbalance in the direction of commuting journeys on the A12.

Half of all northbound journeys to work on the A12 are destined for locations close to the northern end of the SEGway scheme, such as Sizewell, Leiston and Aldeburgh.

Journeys beyond Lowestoft from the south to Great Yarmouth are less significant, given the distance and road conditions currently experienced.

2.7.3 Visitor journeys

Visit Suffolk aims to develop the county as a year-round holiday and short break destination for people of all ages and interests. It plans to do this by increasing the amount of trips visitors make to Suffolk, particularly by those who live within two hours of the county, and the amount they spend. To help achieve these aims it commissioned research (The 2015 Destination Report – Market Segmentation study) primarily, to determine Suffolk's tourism strengths, weaknesses, opportunities and threats and the nature of its visitor market, benchmarking the county against other well-known tourism counties.

Using an online survey completed by 2,263 respondents across a representative sample the survey established key origins for visitors to Suffolk:

- 40% East of England (Suffolk, Essex, Norfolk, Cambridgeshire, Hertfordshire, Bedfordshire)
- 20% South East England
- 9% East Midlands
- 8% London.

With perceived drive times given by respondents of:

- Within 2 hours: 45%
- Two to three hours: 29%
- Three hours or more: 26%.

The research finds two predominant clusters of visitors, with likely different travel habits in terms of day/time of travel and travel when in Suffolk:

- A primary cluster of visitors includes affluent couples (often in their fifties or older) who are likely to use independent hotels and are particularly interested in walking, nature watching, culture and heritage.

- Younger families (parents in their thirties to early fifties) are likely to visit family attractions. They show an interest in cycling, water- based sports and are likely to stay in self-catering units, holiday parks or chain hotels.

Long weekend breaks often using independent hotel accommodation were particularly popular amongst respondents living between a two-hour and four-hour drive away. These visitors mainly come for trips to the Heritage Coast and Woodbridge, of specific interest to our study area. Further north, holidays to Lowestoft and its surroundings are more likely to be a week in length with visitors (families) more likely to use holiday park accommodation available on this section of the coast.

Suffolk's key holiday season appears to be long from April to September. This extent of seasonality is reflected in the traffic flows described later in this section.

Suffolk's natural environment appeared to be the most visited attraction, with the coastal beaches (83%) and countryside (75%) appearing at the top of the list, right across the board. Visitors were asked unprompted to name a location that had proved particularly appealing, demonstrating the importance of Suffolk's coast to tourism and repeat visits, with Southwold, Aldeburgh and Woodbridge particularly prominent.

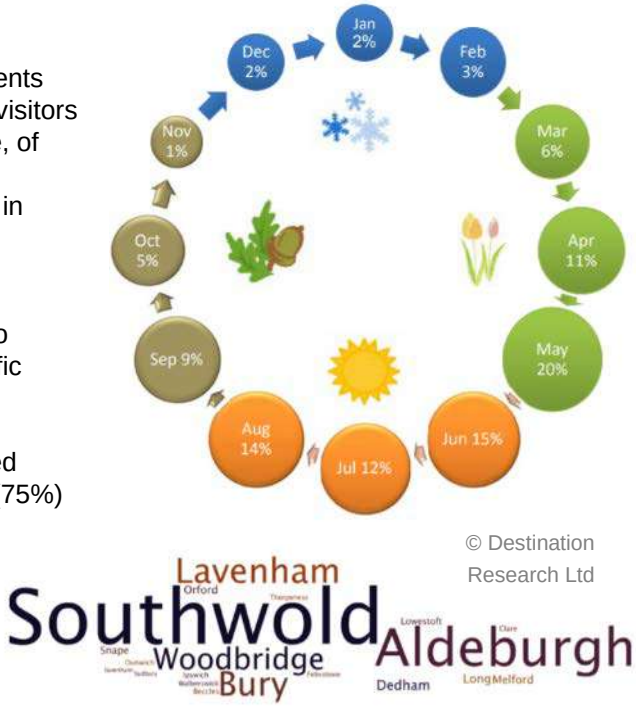


Figure 2-17 : Suffolk's long tourist season and visitor view of tourist locations (Source: Destination Research Ltd Report, 2015)

Key Observation

Suffolk's coastal season is relatively long covering all of spring and summer. The coast is the most visited attraction, with key destinations in the county being Southwold and Aldeburgh. For the Heritage Coast covered by Suffolk Coastal District and the south of Waveney District the predominant type of trip is a long weekend break using independent hotels, with implications for evening peak flows towards the end of the working week, as well as travel when in Suffolk.

Trips to the Lowestoft section of the coast are more likely to be family orientated, week long and based at a holiday park where there will be more activities on site, likely to reduce the need for travel.

2.7.4 Traffic volumes

This section provides a brief description of the annual, seasonal and hourly variation on traffic flows on the A12. Further information on traffic flows elsewhere in the study area can be found in the supplementary *Traffic Data Collection Report.*

Annual Average Daily Traffic flows

In 2017, the Annual Average Daily Traffic (AADT) flow on the A12 at Farnham was 16,600. These flows are outside the recommended opening year flow range of up to 13,000 vehicles AADT for a single carriageway road, as stipulated by the Design Manual for Roads and Bridges. Furthermore, this hides some of the seasonal variation in traffic flows that promotes added stress during the summer months, which we now discuss.

Seasonal variation in traffic flows

The seasonal variation in traffic flows between January and August on the A12 in Stratford St Andrew is presented in **Figure 2-18** below. This indicates that there is a significant increase in traffic using the road in summer on all days of the week. This increase is more pronounced from Friday to Sunday, indicating that tourism plays a significant role in exacerbating the potential for traffic problems during summer weekends.

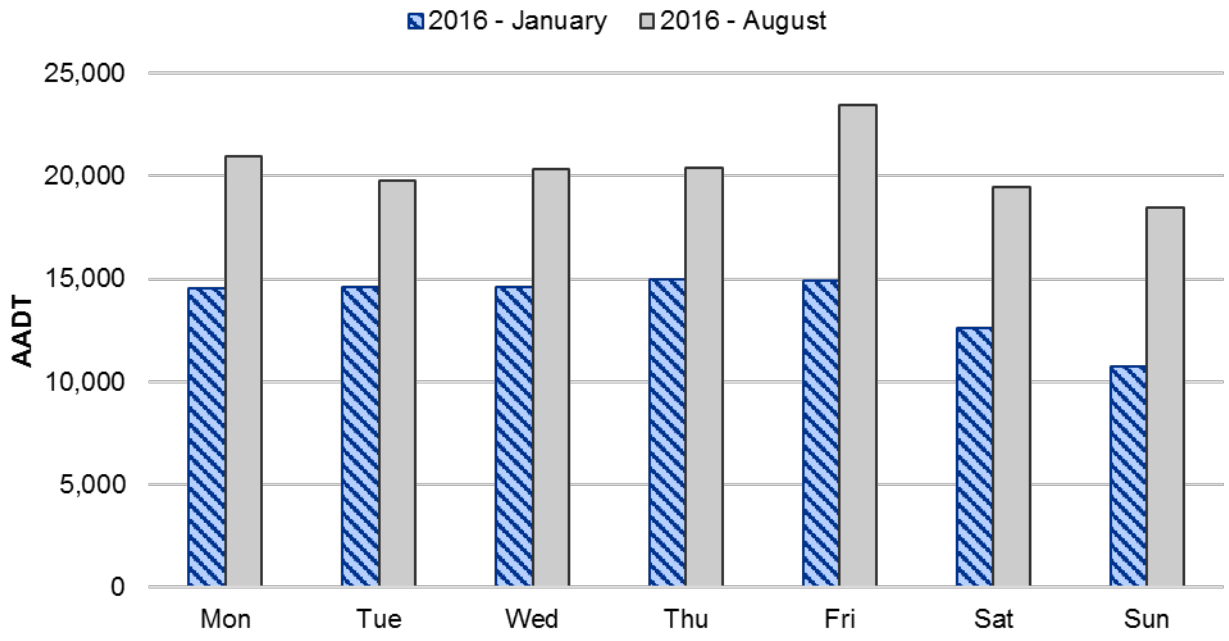


Figure 2-18: Seasonal differences of vehicles using the A12. Source: Suffolk County Council 2016.

Figure 2-19 and **Figure 2-20** shows average flows by direction at the same location for 12 hours 0700-1900 on Saturdays and Sundays respectively by month in 2016. On Saturdays, northbound flows tend to be higher than southbound in most months, with a more marked difference during the summer months. The reverse situation is found on Sundays.

Figure 2-19 and **Figure 2-20** are consistent with a trend for weekend leisure trips in Suffolk and Norfolk during the summer months.

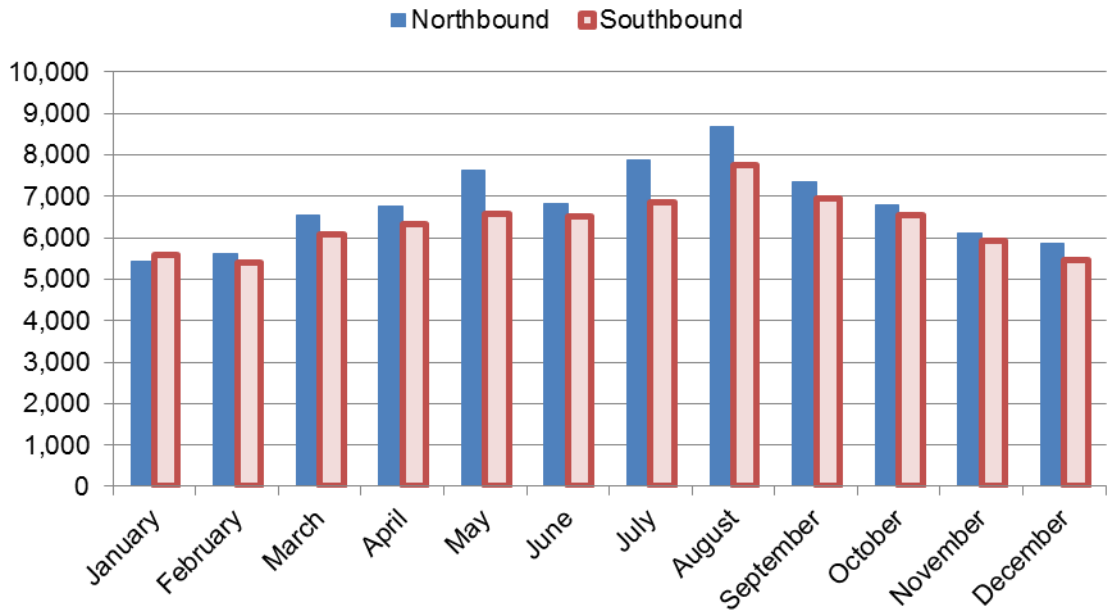


Figure 2-19 : Monthly average flows on A12 at Farnham, Saturdays 0700-1900, 2016

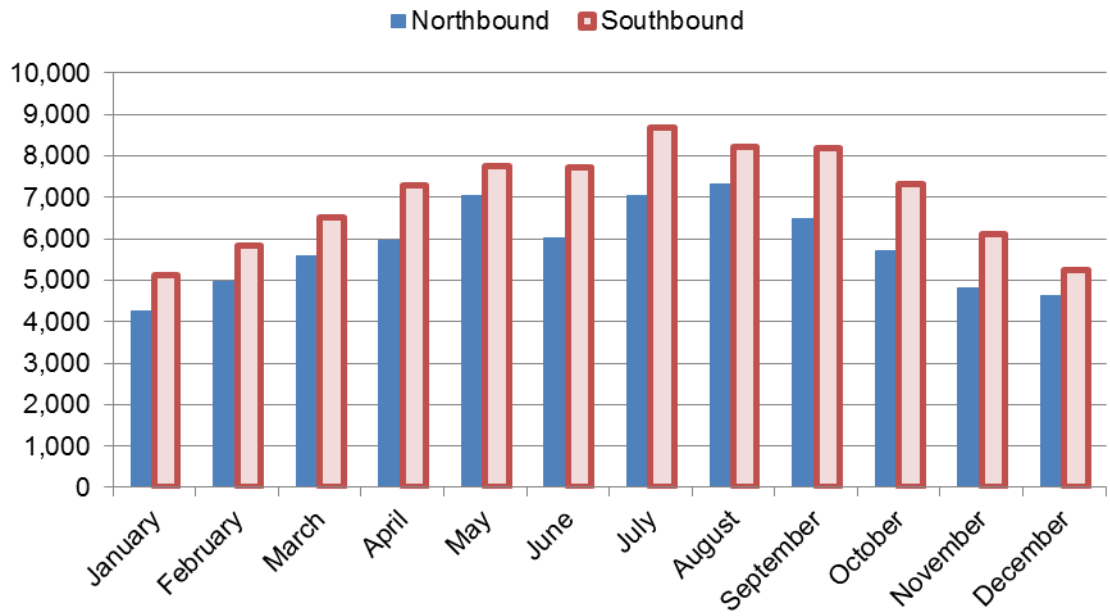


Figure 2-20 : Monthly average flows on A12 at Farnham, Sundays 0700-1900, 2016

Figure 2-21 and **Table 2-14** compare the average 12-hour flows at the same location for weekdays, Saturday, Sundays and Bank Holidays by quarterly period in 2016. The greatest average flows are observed during the summer months between July and September. The difference is most marked for weekends and bank holidays – flows on Sundays during the summer months are 44% greater than on Sundays during winter. During the second and third quarters of the year, bank holiday flows exceed the average weekday flows.

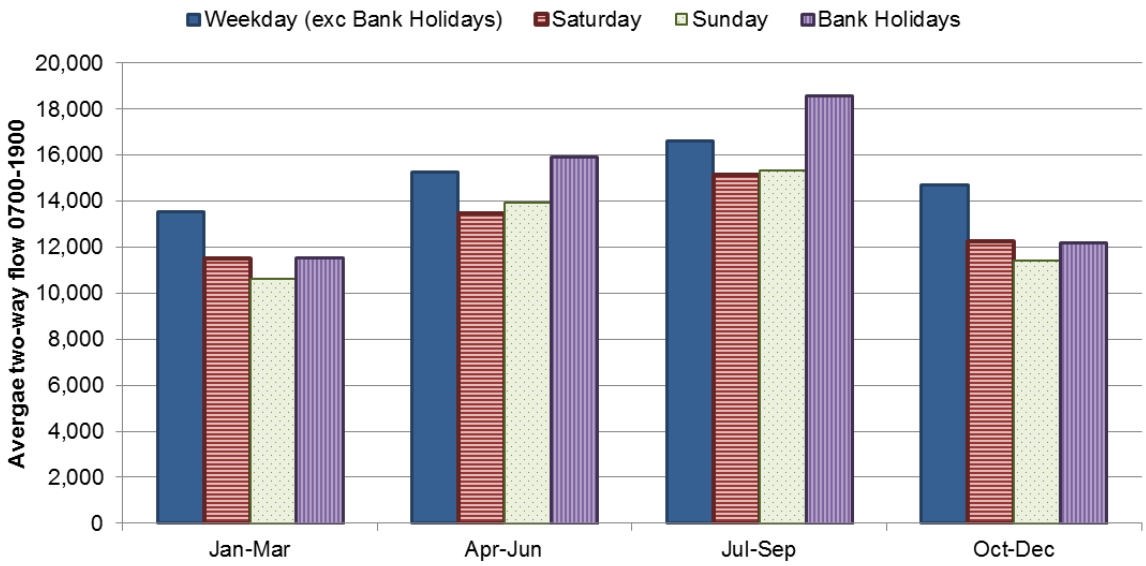


Figure 2-21 : Quarterly average 12-hour flows 0700-1900 weekdays, weekend and bank holidays 2016

Quarter 2016	Weekday (excluding Bank Holidays)	Saturday	Sunday	Bank Holidays
Jan-Mar	13,600	11,500	10,600	11,500
Apr-Jun	15,300	13,500	13,900	15,900
Jul-Sep	16,600	15,100	15,300	18,600
Oct-Dec	14,700	12,300	11,400	12,200
Increase Jul-Sep/ Jan-Mar	23%	32%	44%	61%

Table 2-14 : Quarterly average 12 -hour flows 0700-1900 weekdays, weekend and bank holidays 2016

Key Observation

Annual Average Daily Traffic Flows on the A12 at Farnham = 16,600 vehicles. This however hides a significant variation in flow over the course of the year.

Traffic flow patterns on the A12 in the study area are representative of a road that plays a significant role in the region's tourism economy:

- *Greatest observed traffic flows are experienced in the summer months*
- *Summer average weekend traffic flows are higher than average weekday flows from October to March*
- *Higher northbound Saturday flows are balanced by higher southbound Sunday flows reflective of a significant influx of weekend tourism related traffic from London and the South East to the region.*

Hourly variation in traffic flow by day

Figure 2-22 displays the times of peak demand on the section of the A12 under study, both on a regular weekday and across the weekend throughout the year. The data shows that Friday evening is the time of peak demand on the A12, however other notable peaks have been recorded on Saturday/Sunday mornings and Sunday afternoons/evenings. The Friday afternoon peak is likely due to the combined factors of commuters travelling home and tourists travelling to the district for the weekend, even outside of spring and summer.

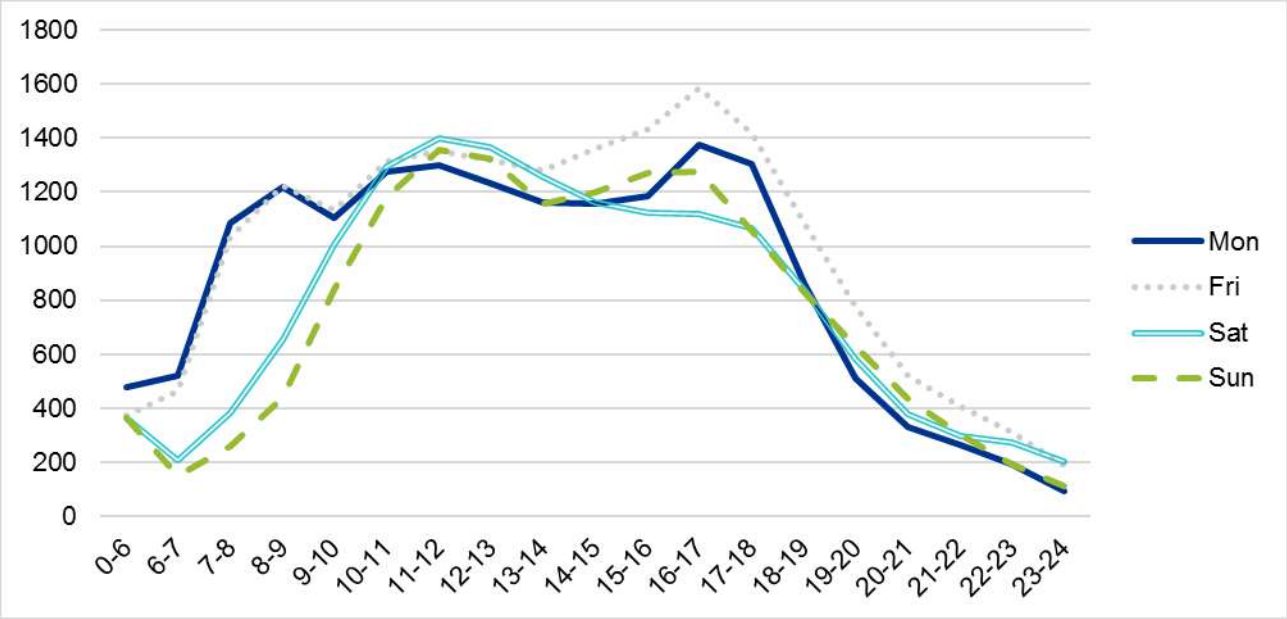


Figure 2-22 : Hourly differences in demand for vehicles using the A12 across the week. Source: Suffolk County Council 2016.

From a tourism perspective, there is the potential for the existing road capacity on the A12 and associated congestion during the peak summer months to restrict access (and worsen traveller perception of their ability to do so) to regional tourist destinations and seasonal events such as festivals. This may also result in journey suppression due to a lack of traveller confidence in the network and act as a disincentive to repeat journeys. It is possible that both these factors may be affecting investment in the regional tourist economy, restricting growth opportunities.

AM and PM peak hour flows

Figure 2-23 shows the average two-way flows during the weekday AM peak hour (the maximum of the three hours between 0700 and 1000) and the PM (the maximum of the two hours between 1600 and 1800) peak hour on the A12 in Farnham for each month in 2016. The weekday PM peak hour two-way flow is consistently greater than the weekday AM peak hour flow throughout the year. There is also a seasonal trend with the highest flows observed during the summer months July to September.

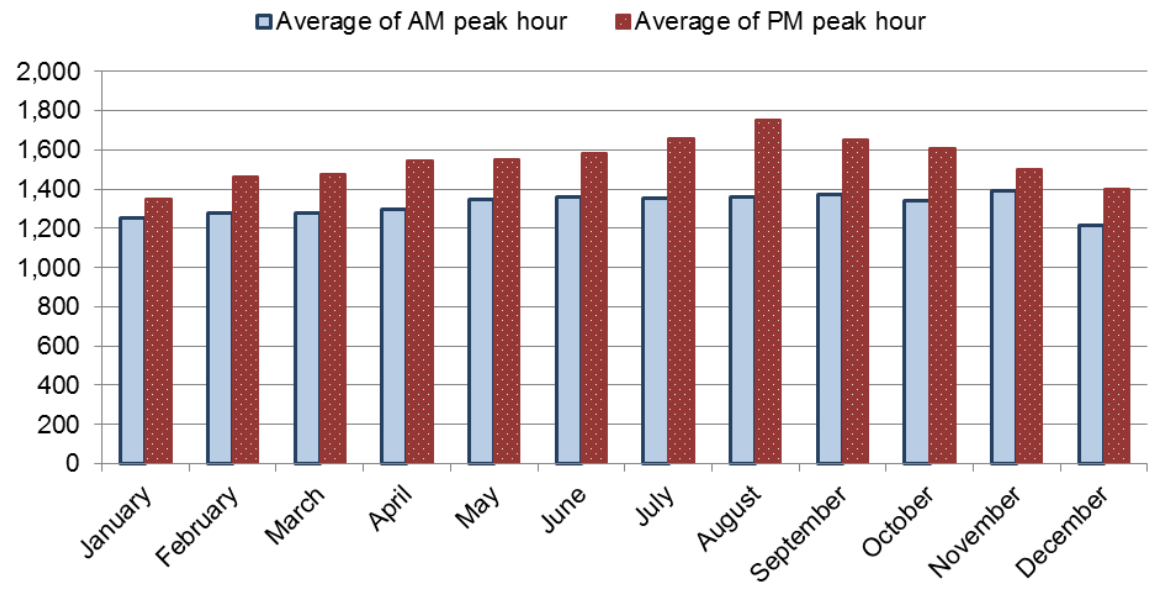


Figure 2-23: Average two-way flows on A12 at Farnham, weekday AM and PM peak hours, 2016

Key Observation

Evening peak flows are higher than morning peak flows reflecting the dual role that the road plays in terms of the commuter and visitor economy. This difference is most pronounced in the summer.

2.7.5 Speed and journey time analysis

Journey time data obtained from Trafficmaster Ltd from 2016 has been analysed to gain a greater understanding of the average traffic speeds along the subject section of the A12. The Trafficmaster data provides individual vehicle speeds obtained via GPS devices fitted to both private and commercial vehicles. Trafficmaster data is able to provide a large sample of vehicle speeds and can be analysed over any route.

Data has been analysed in terms of:

- Average speeds on the A12 between Ipswich and Lowestoft on Friday evenings, during the summer months, when the greatest demand for travel occurs (see Figure 2-24)
- Comparing average speed with the free flow speed within the specific study area to understand where congestion occurs between Wickham Market and Saxmundham. Again this has been analysed on Friday evenings during the summer months.
- Journey time analysis of the A12 at weekday peak and inter peak times between Woodbridge and Saxmundham.

Figure 2-25 shows locations where pinch points occur on Friday evenings during summer months. Average vehicle speeds reduced to 60%-70% of free-flow speed in the village of Little Glemham and 70-80% of free-flow speed in the sections between Stratford St Andrew and Farnham.

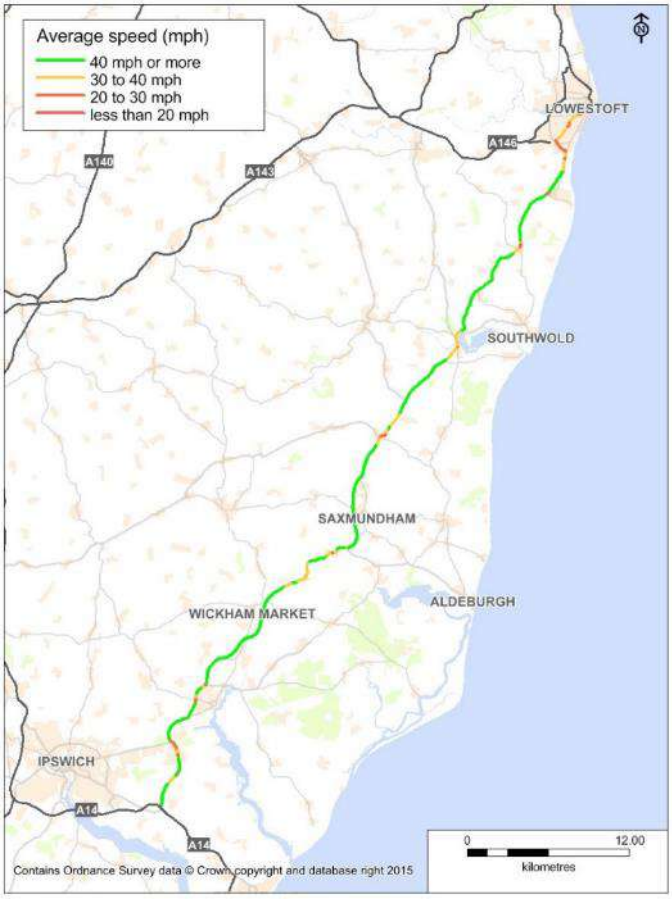


Figure 2-24 : Average speeds on A12 between Ipswich and Lowestoft (Friday evenings 1600-1900, July to September 2016)

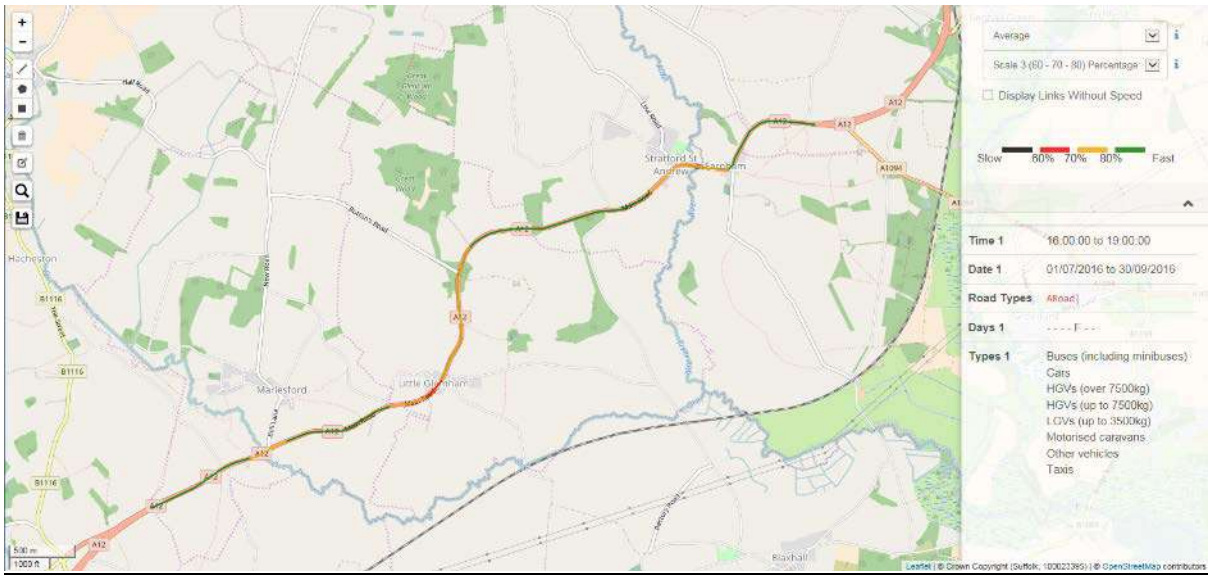


Figure 2-25 : Congestion pinch points along the A12, Fridays 1600-1900, July-September 2016

Figure 2-26 shows locations where slow moving traffic occurs on weekends during summer months. Average vehicle speeds reduced to 60%-70% of free-flow speed in the village of Little Glemham and the sections between Stratford St Andrew and Farnham.

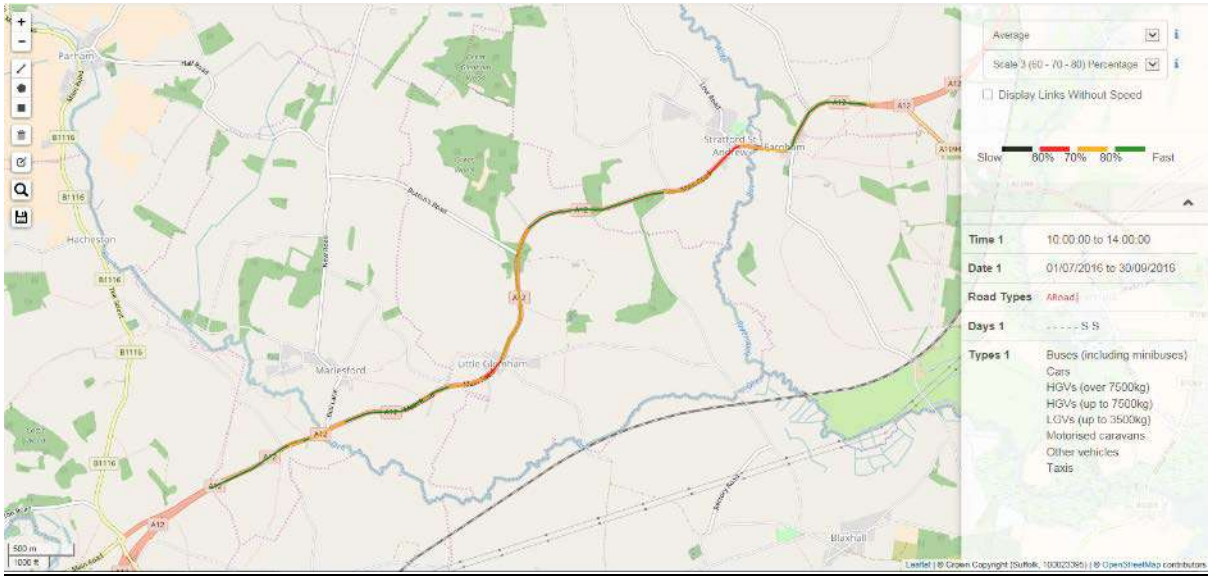


Figure 2-26: Congestion pinch points along the A12, Saturday-Sunday 1000-1400, July-September 2016

Figure 2-27 and **Figure 2-28** display the variability of speeds for journeys in the northbound direction for the AM and PM peaks. South of the Four Villages, the dual carriageway section of the A12 Wickham Market Bypass results in average speeds of around 65mph with the variability clustered around 60-80mph. Average speeds through the Four Villages fall to 25-40mph on average, with variability ranging from 10mph (5mph in the PM peak) to 35mph noted in the villages of Little Glemham, Stratford St. Andrew and Farnham.

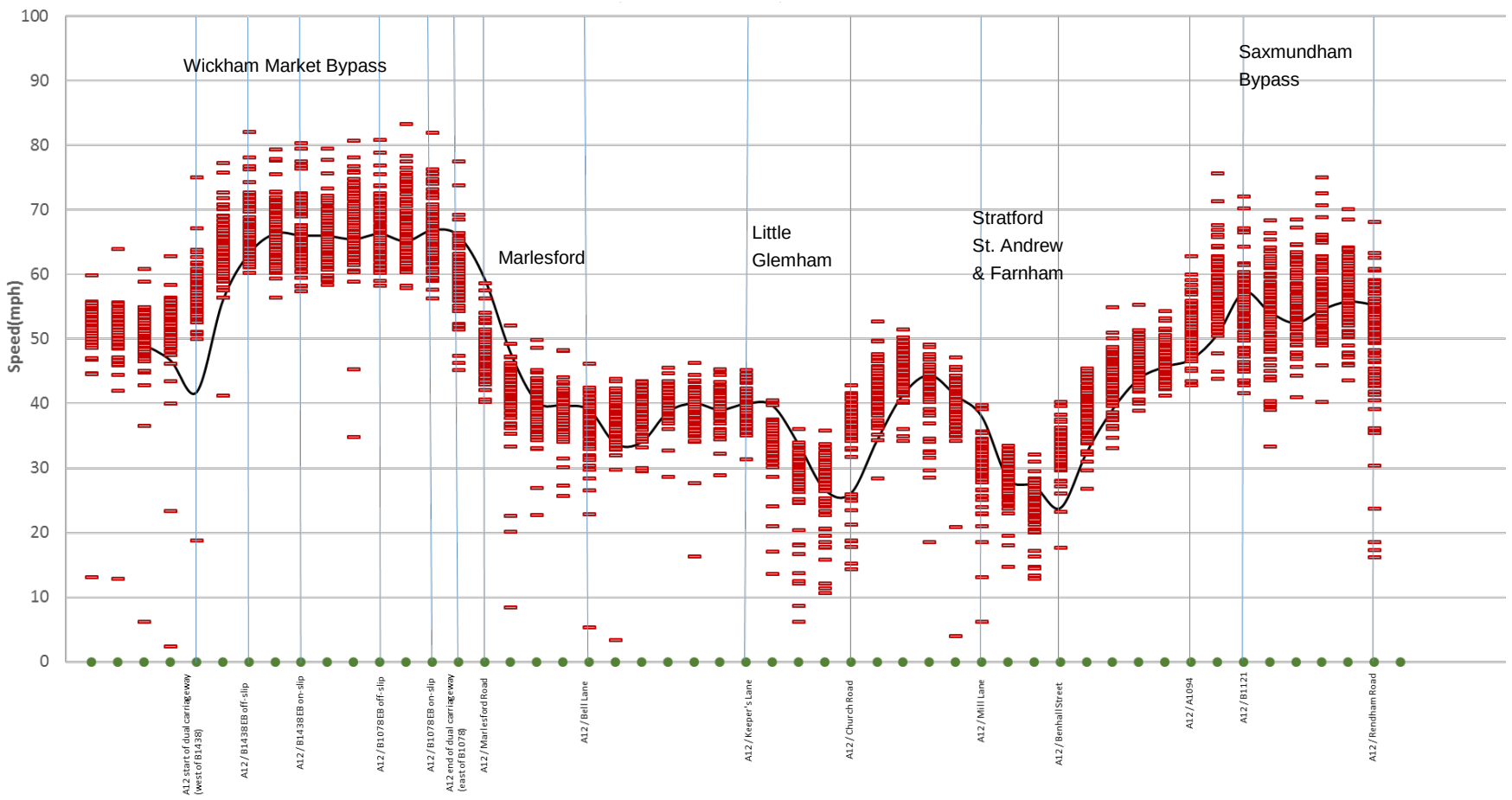


Figure 2-27 : A12 speed variability AM northbound

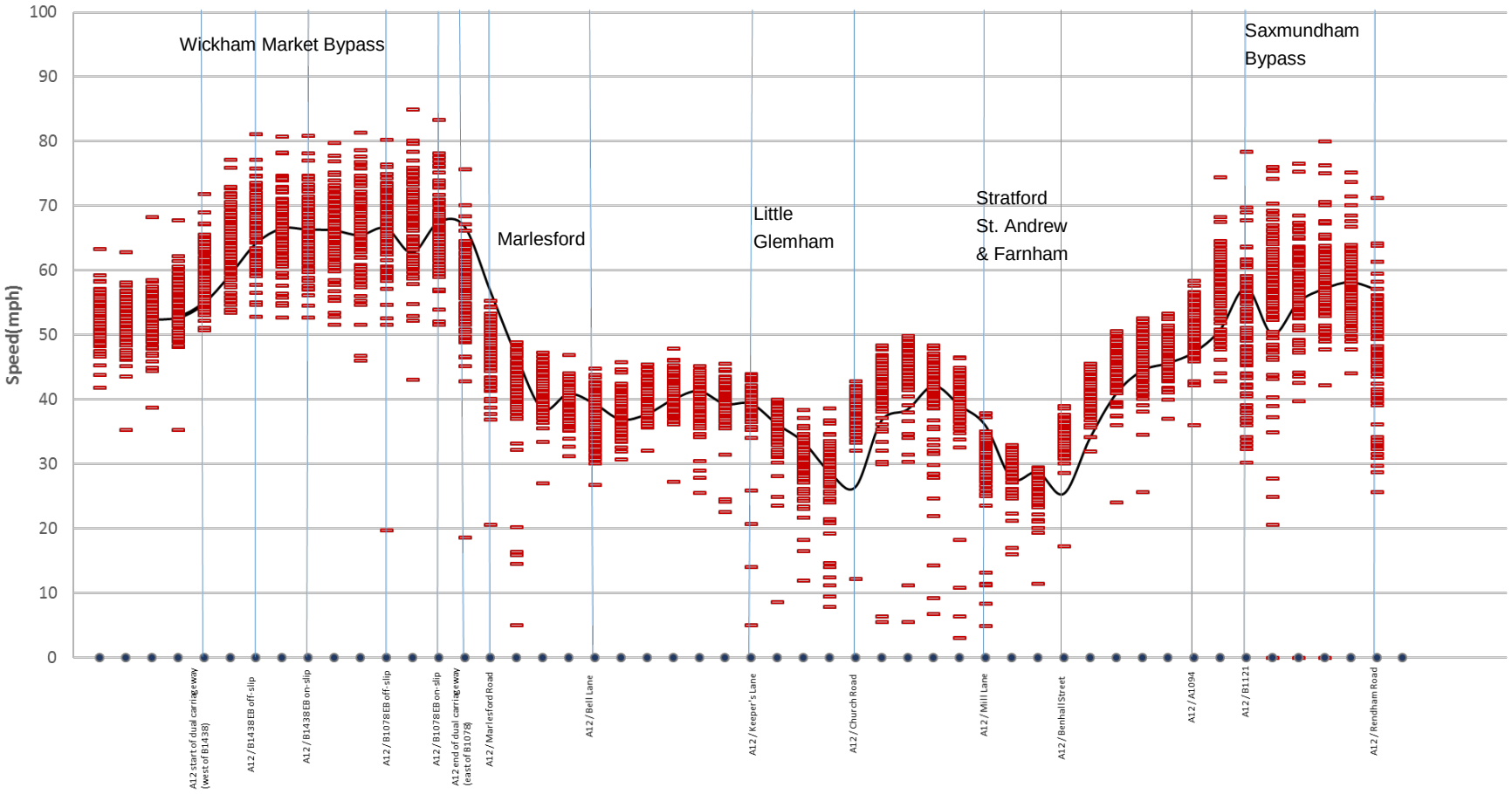


Figure 2-28 : A12 speed variability PM northbound

Figure 2-29 and **Figure 2-30** display the speed variability of journeys in the southbound direction. As with the opposite direction, average speeds are lower through the Four Villages than the adjoining section. Variability is greatest in the AM peak and in this direction, with more incidences of lower speeds (<10 mph) noted than in the opposite direction reflecting volumes of traffic.

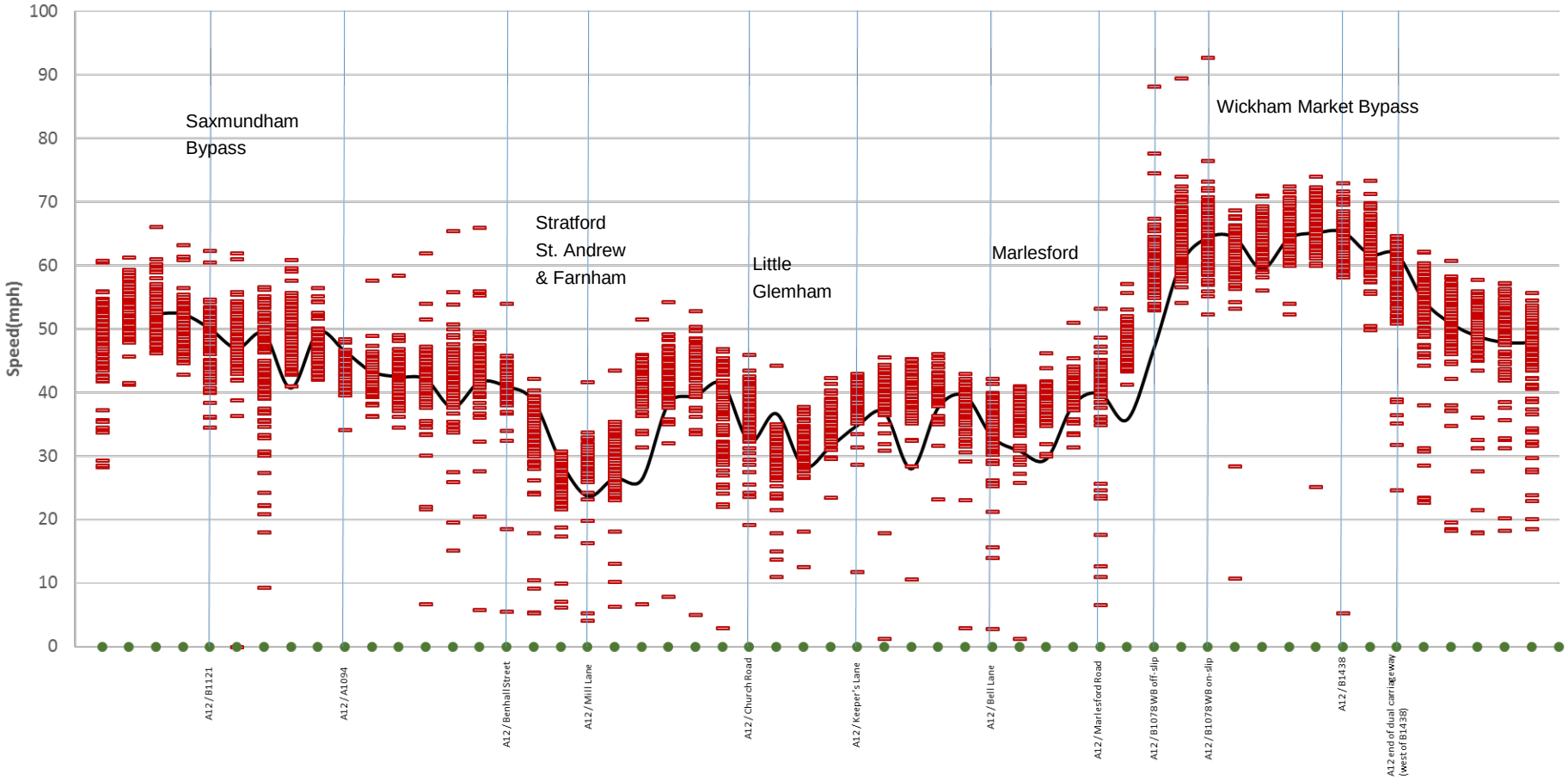


Figure 2-29 : A12 speed variability AM southbound

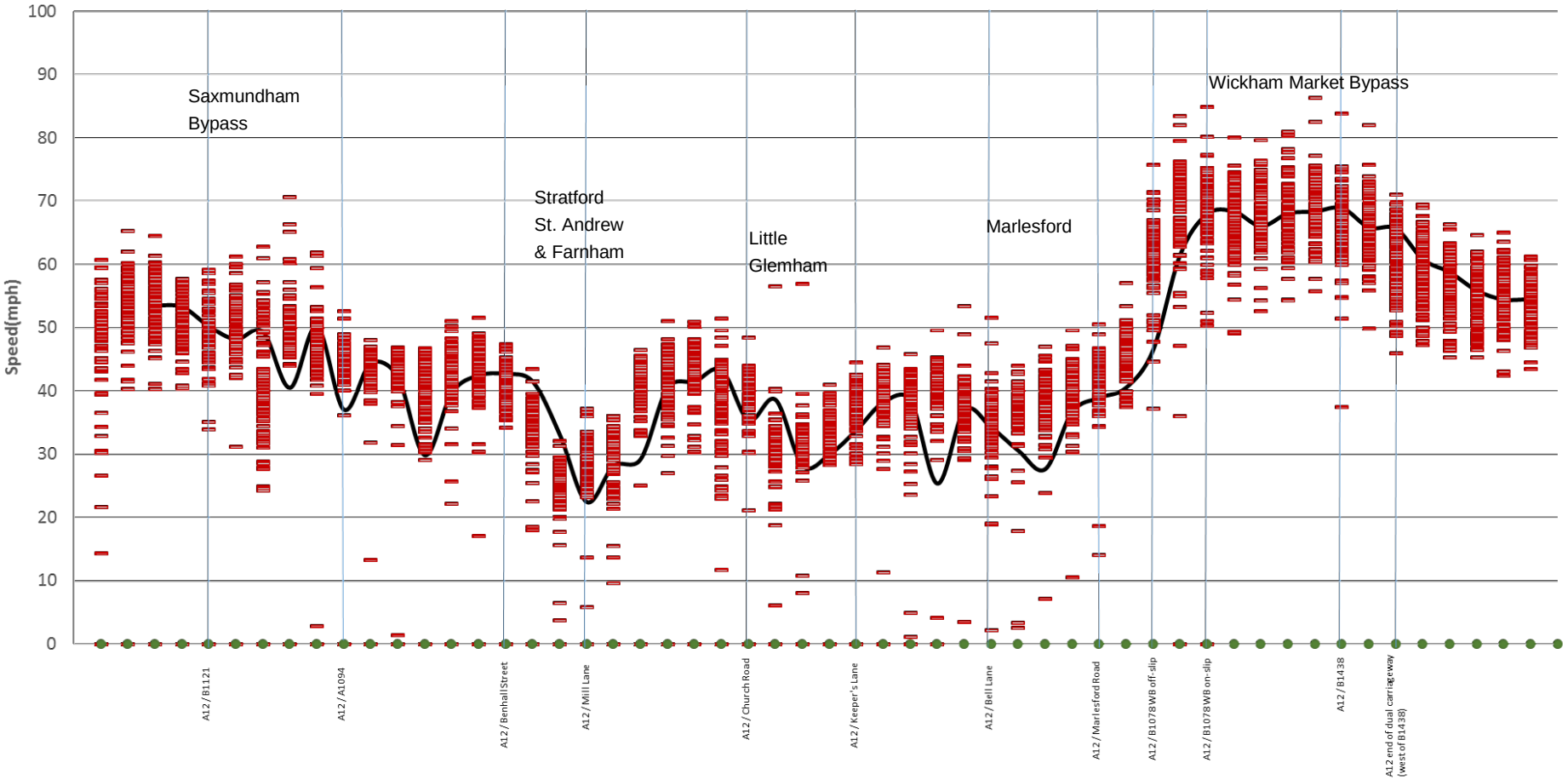


Figure 2-30 : A12 speed variability PM southbound

Key Observation

These graphs display the impact the single carriageway section of the road and multiple junctions are having on the smooth operation of traffic along this section of the A12. The high variability of speeds through the Four Villages further confirm the observed congestion issues and also indicate the potential for stop-start nature of traffic which is likely to worsen with increasing traffic in future.

2.7.6 Heavy Goods Vehicle (HGV) flows

2017 data shows that 6% of the total vehicles on the A12 through Farnham and Stratford St Andrew were HGVs. As the main road serving East Suffolk and its economy, principal reasons for HGV flows will include:

- Agricultural traffic including deliveries of grain to the Port of Ipswich and delivery of produce to local and national retailers
- Distribution of raw materials to and outgoing goods from the region's businesses
- Materials for the offshore wind industry
- Periodic servicing of Sizewell B planned "outages" in addition to other deliveries and works
- Delivery of goods to/from the Strategic Road Network (e.g. A14, A47) and the ports of Lowestoft and Felixstowe.

HGV flows are anecdotally compounded by high volumes of caravans (although not captured separately in manual traffic counts), a key component of Suffolk's tourism industry. Furthermore, a caravan retailer is located in Farnham adjacent to the A12.

Specific sections of this route are particularly unsuited to HGVs and articulated vehicular traffic. At the 'Farnham bend', pictured in **Figure 2-31**, the A12 bends sharply and HGVs often struggle to pass each other, requiring advance reactive signage to warn drivers of oncoming large vehicles. This location, and the narrow carriageway section preceding the bend from the south, has a significant reputation as a pinch-point on the A12 route. In some cases, police have had to stop traffic in order to assist large vehicles to negotiate the bend, such as materials for the onshore or offshore wind industry. A selection of photographs taken when turbine components were delivered to a site in Kessingland in 2011, are shown at the following website link: http://www.dailymail.co.uk/news/article-1373915/Gently-does-Residents-look-giant-wind-turbine-hauled-round-tight-bend.html

Figure 2-31 : Large vehicles trying to negotiate the 'Farnham bend'

2.7.7 The "Farnham Bend" - Impact of HGVs and turning movements

In order to assess the impact of HGVs meeting at the Farnham Bend and vehicles turning movements into side roads at this constrained location on journey times along the A12, a survey was carried out on the weekdays of 20 and 21 July 2017 along an approximately 185m section of the road, including this bend. Further detail can be found in the *Traffic Data Collection Report;* the key points to note being:

- The results of the survey indicate that the majority of the queues in the area occur during morning and evening peak period, when more motorists are on the road, with a smaller peak around lunchtime.
- the majority of queueing events at the Farnham bend is due to vehicles turning in or out of Langham Road stopping the flow of traffic. The absence of a right turn lane and poor visibility exacerbates the problem.
- When large vehicles do meet these cause the longest queues.

Key Observation

HGV deliveries are an essential part of the ongoing function and operation of local and regional businesses which add immense value to the region's economy. The A12 being the primary artery for travel in East Suffolk plays a key role despite the substandard nature of this section of the road.

The Farnham Bend is noted as a local pinchpoint on the A12. This is caused by both a combination of HGVs meeting at the narrowest section, and also more frequently by vehicles attempting to turn into and out of side roads with poor advance visibility.

2.7.8 Accidents

Analysis of DfT's STATS19 accident database has been undertaken for the area likely to be affected by the scheme for the period between January 2012 and January 2017. The locations of these accidents are shown in **Figure 2-32**.

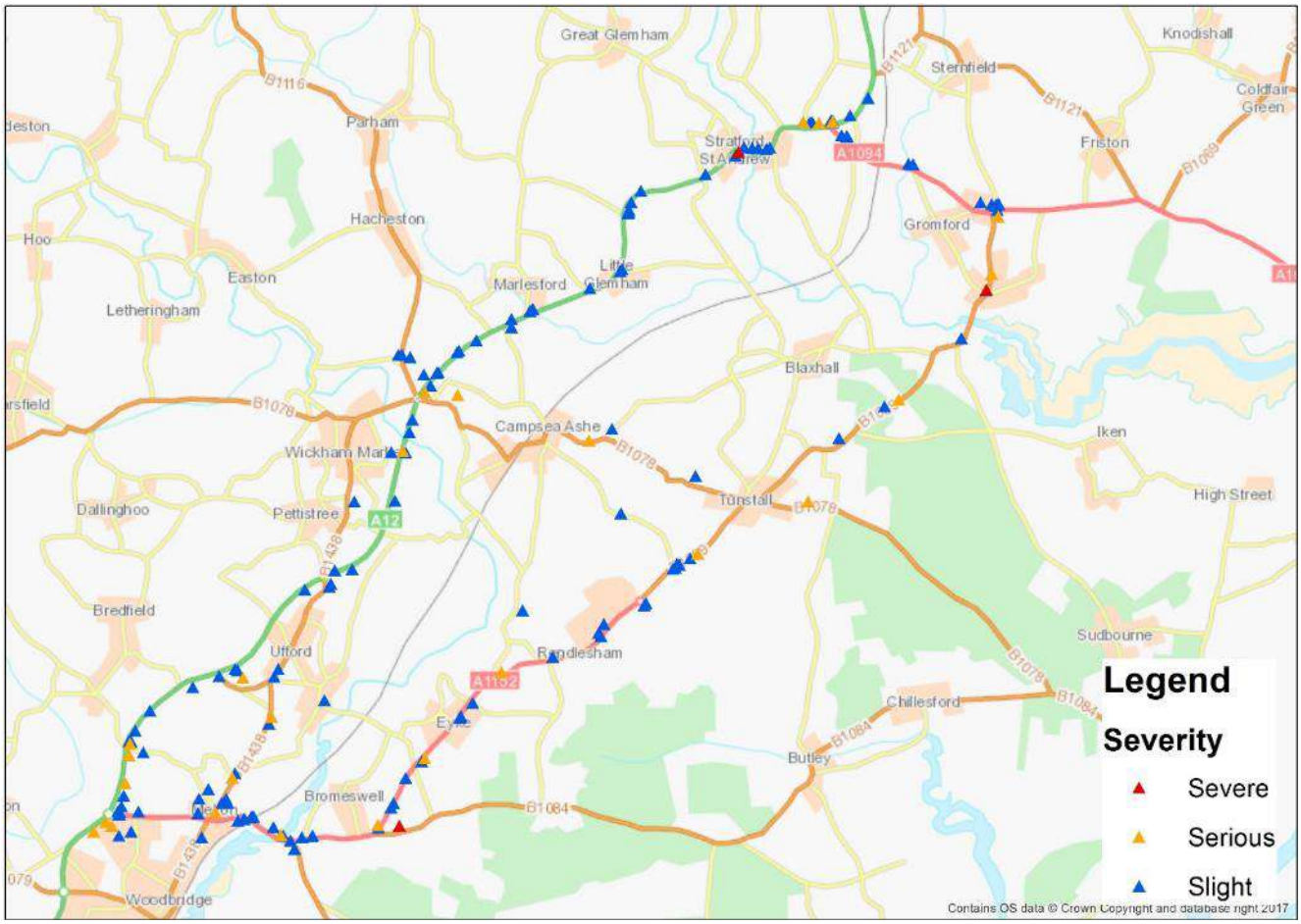


Figure 2-32 : Personal injury accident locations 2012-2017

Looking at just the A12 between the A1094 and B1078 analysis shows that there were 63 personal injury accidents (PIAs) involving 99 casualties, of which one was fatal and nine were serious. The main cause of personal injury accidents on this section of the A12 is shunts by vehicles into the rear of turning vehicles, followed by head on collisions when turning, then drivers losing control of their vehicle. Shunts are a symptom of congested conditions and poor visibility associated with lower standard roads.

The A12/A1094 junction is a particular accident blackspot, rated the seventh most serious for accidents in Suffolk. Vehicles on the westbound approach to the junction are warned of the potential risk of accident by two large traffic signs (see right), and a speed camera has been installed on this approach, which has a restricted speed limit of 50 mph. There were 16 accidents recorded close to this junction over the five-year period 2012-2017.

Further details on the accident analysis can be found in the *Option Assessment Report* and *Economic Assessment Report* annexes.

Key Observation

The section of A12 passing through the villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford experiences a higher frequency of personal injury accidents than expected for older single carriageway 'A' roads. The A12/ A1094 junction at Farnham in particular has been identified as an accident hotspot with road safety initiatives introduced to try to reduce the safety risk for road users.

2.8 Users' perception of the A12

This section describes the views of businesses and tourist visitors/potential visitors to Suffolk

2.8.1 Business perception

During January / February 2016 Suffolk County Council and the Suffolk Chamber of Commerce undertook an extensive engagement exercise with businesses in East Suffolk to understand local businesses perception of significant transport issues, and whether the A12 was a barrier to growth, and whether a new A12 road scheme was needed. The objectives of the exercise were to understand:

- The impacts of A12 congestion issues on existing business activities and the extent to which it constrains prospects for growth
- Respondents priorities for improving the A12 in East Suffolk, and the value added by a SEGway scheme.

The engagement exercise involved an online survey and two business consultations. Over 50 businesses responded to the online survey and 78 business people attended the two consultation events. Further details can be found in *Business Perception Survey 2016.*

Businesses stated that their key traffic issues were as follows (**Figure 2-33**):

- Unpredictable journey times
- A perception that the area is unattractive for investment or business expansion
- Length of business-related journey times (deliveries, visiting clients).

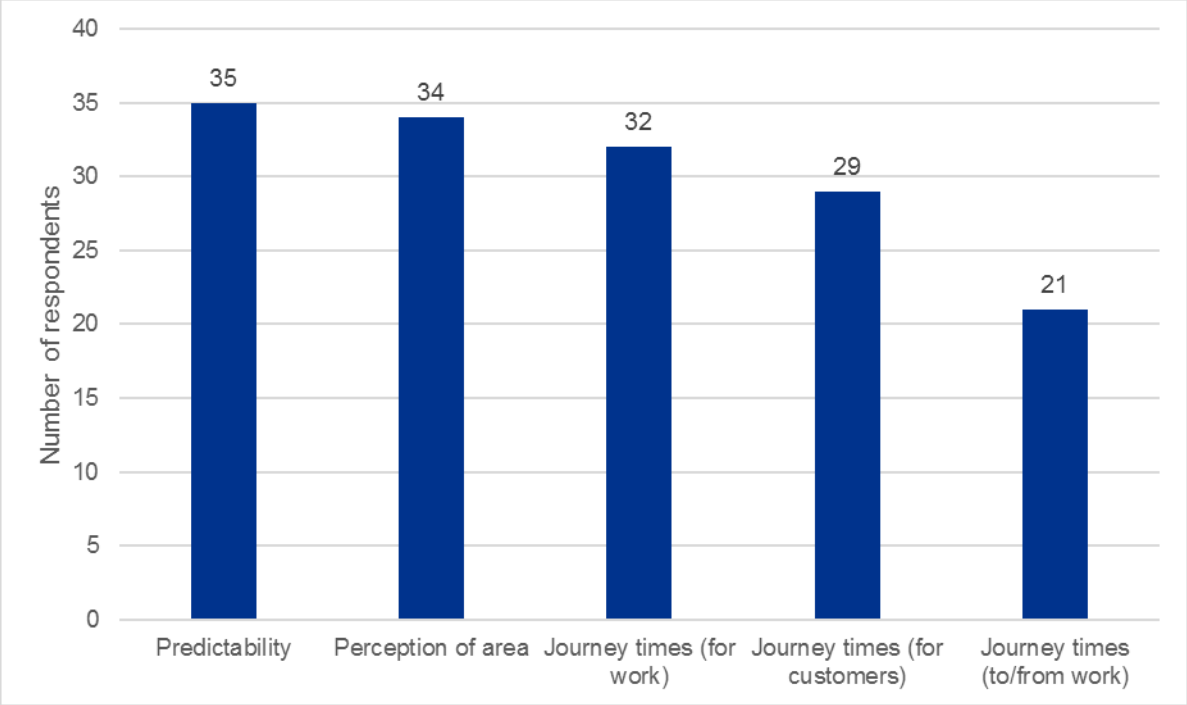


Figure 2-33 : Significant traffic issues for local businesses

Businesses were asked to prioritise eight potential sections of the A12 between Ipswich and Lowestoft for improvement (**Figure 2-34**). The two sites that received greatest support were:

- Marlesford to Farnham (34 of 78 respondents)
- Yoxford (28 of 78 respondents).

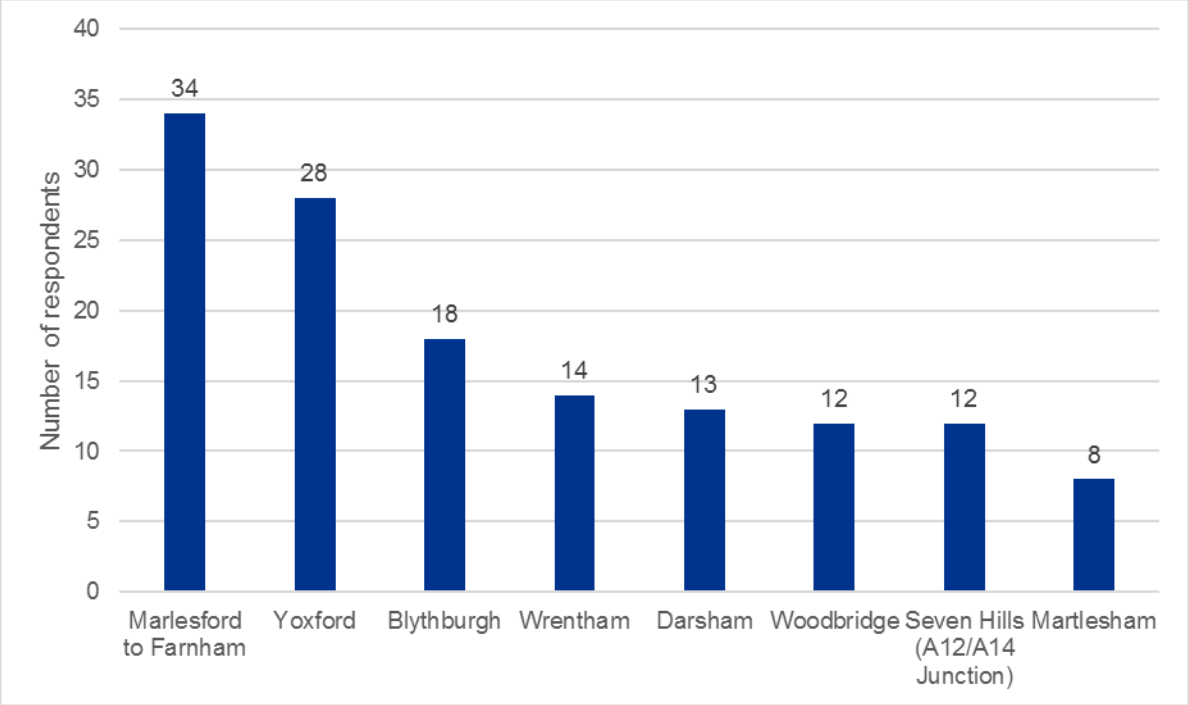


Figure 2-34 : Businesses' priority locations for improvement between the A12/A14 Seven Hills and Wrentham in the north

As part of the development of the Outline Business Case we have sought to enhance our understanding of the importance that businesses place on the A12 for their operation.

Key Observation

East Suffolk's businesses have ranked an improvement to the A12 between Marlesford and Farnham as the most pressing for investment to help solve problems of journey time reliability, the perception of the area's suitability for inward investment and journey times to customers and for staff.

2.8.2 Visitors' perception

The 2015 Destination Research Report previously referenced asked visitors a series of open ended unprompted questions to understand their perceptions about the best and worst things about Suffolk, with the following word clouds demonstrating the importance given by respondents.

The **best thing about Suffolk is**… "Suffolk appears to be valued, both for its coast and rural appeal. The towns, villages, scenery and friendly people are also strong assets."

The **worst thing about Suffolk is…** The main weaknesses appear to be the poor road network into Suffolk, and the roads and traffic found within Suffolk, as well as the weather and people's perception that the county is far away.

When respondents were asked how Suffolk could be made a more appealing place to visit, improving transport (to and within) the county was the primary suggestion, particularly better transport links. The New Anglia LEP's SEP (2014) similarly (previously) and the subsequent Economic Strategy for Norfolk and Suffolk (2017) acknowledged the linkage between improved accessibility and the prospects for tourism.

Key Observation

Visitors and potential visitors to East Suffolk mention the coast as the standout highlight of a trip to Suffolk. Unfortunately, key road links including the A12 are seen as the worst thing about Suffolk, reinforcing the need for intervention.

2.8.3 Public Consultation Responses

The SEGway proposals were subject to non-statutory public consultation between 12 September and 25 October 2017, in order to gather stakeholder feedback. The consultation offered two possible route options for a proposed bypass to the Four Villages along the A12; options, the single carriageway LB2s and dual carriageway LB1d, as well as background on the scheme and objectives.

The public consultation allowed respondents to highlight issues associated with the existing A12 road, with congestion, safety and ability to cater to future growth noted as the most important factors for local stakeholders as shown in **Figure 2-35**.

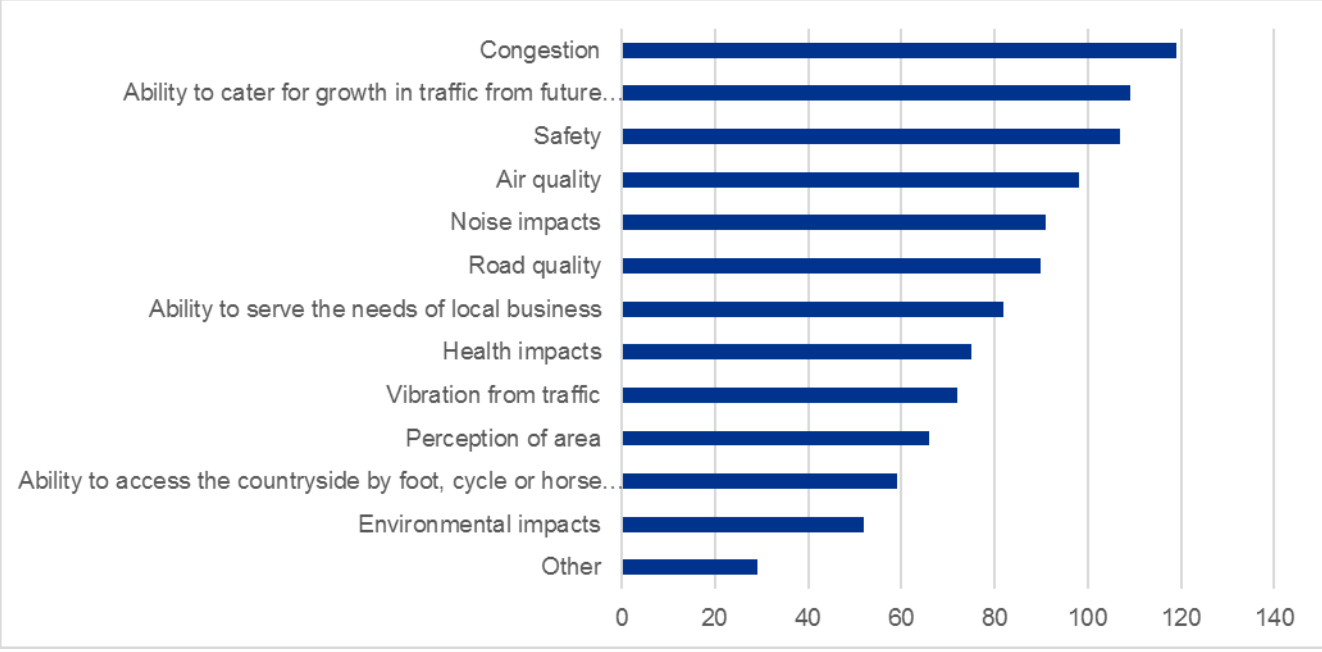


Figure 2-35 : Negative impacts of travel on the A12

2.9 Environment

A detailed *Environmental Report* has been produced as part of the scheme's Outline Business Case as enclosed as supporting Annex 2. A broad overview of specific points of interest for each of the environmental features are provided below. This should be read alongside the *Environmental Constraints Maps* at the end of this section.

2.9.1 Air quality

In accordance with Part IV of the Environment Act (1995) local authorities in the UK must carry out reviews and assessments of air quality in their area. The Air Quality Strategy (Department for Environment, Food and Rural Affairs 2000) outlines a framework for improvements and where an authority identifies an area which is likely to exceed these targets it must be declared an Air Quality Management Area (AQMA).

There is one Air Quality Management Area (AQMA) within 200m of the affected network of both of the options. The AQMA (No.3) is designated for an area which incorporates four properties comprising 1 – 5 Long Row, Main Road, in Stratford St Andrew. The most recent annual mean concentrations measured in 2015 within the AQMA remain above the annual mean NO_2 objective of 40 µg/m^3, with 43 µg/m^3 measured at monitoring site STA1 and 44 µg/m^3 at monitoring site STA8. An air quality action plan (AQAP) was produced in Feb 2017. A village by-pass is one of the measures given in the AQAP.

The Defra background concentration mapping shows that the background concentrations of NO_2 and PM_{10} in the area for the current year and opening year are below the air quality objectives for both pollutants.

2.9.2 Noise and vibration

No noise surveys have been undertaken for this assessment as they are not required by the WebTAG methodology. However, given the rural location it is likely that traffic on the existing A12 is the dominant noise source in the area, particularly within those villages proposed to be bypassed.

Landscape

Cultural

The Suffolk Coastal District Special Landscape Area (SLA) covers much of the area, including the valleys and tributaries of the Rivers Alde, Deben and Ore and the following Parks and Gardens of Historic or Landscape Interest:

- Glevering Hall Park;
- Marlesford Hall Park;
- Glemham Hall Park (Historic England Registered Parks and Gardens);
- Benhall Lodge Park;
- Campsea Ashe Park (Historic England Registered Parks and Gardens).

Several Ancient Woodlands and Tree Preservation Orders (TPOs) also occur.

Topography and Hydrology

The topography comprises a gently rolling plateau at the south western section of the proposed routes, with sloping valley sides towards the middle of the study area levelling off at the north eastern end of the scheme. Where the scheme options LB1d and LB2s cross the rivers Ore and Alde the land is relatively flat, reflecting the river floodplains.

The study area includes three significant watercourses, the rivers Alde, Deben and Ore, and their tributaries. These form wide flat riparian zones across land dominated by arable fields, pasture, woodland and hedgerows.

Landscape, Land Use and Settlement Pattern

The field pattern in the north is ancient and organic in appearance with many enclosed former greens and commons. To the south and southwest the field pattern of former heathland is more regular. Several historic parkland sites are a characteristic and influential feature. Meadows and vegetation occupy the flat valley bottoms that surround the rivers Alde and Ore, however, some meadow grassland has been drained and cultivated as arable fields. Outdoor pig rearing and sugar beet production are common in the west and southwest.

Small clustered villages and numerous dispersed hamlets reflect historic settlement patterns within parishes although, in places, this pattern has been affected by modern infill and ribbon development. Timber-framed structures are interspersed with brick constructions and roofs of flat or curved peg-tiles and 19th century estate cottages are common. There has been an increase in the spread and influence of horse paddocks, barn conversions with associated garden curtilages and post and rail fencing. Industrial agricultural buildings are visible where there is an absence of screening from existing landform or tall vegetation.

The landscape is well wooded, with frequent blocks of ancient semi-natural woodland, plantations, coverts and hedgerow trees. Some lines of pines mark field boundaries and form a significant feature in the eastern part of the study area. Some alder carr is associated with the rivers Alde and Ore and their tributaries.

The A12 highway is a dominant and heavily trafficked feature within the landscape, although generally well screened by hedgerows and woodland, including highway planting. The numerous country lanes reflect historic routes and are generally well screened by tall roadside hedgerows and other vegetation.

2.9.3 Historic environment

No Scheduled Monuments, World Heritage Sites or Registered Battlefields have been identified in proximity to the scheme. However, within 1km there are approximately 130 cultural heritage assets, around 80 are designated or registered comprising numerous Listed Buildings, a Grade II Registered Park and Garden (Glemham Park), and two Conservation Areas (Marlesford and Wickham Market).

2.9.4 Biodiversity

There are no nationally or internationally designated Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar[20] sites, Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), within 1 km of the route options. However, a number of international and national designations occur within 5km of either or both options. These include:

- Alde Ore and Butley Estuaries SAC / SPA / Ramsar / SSSI;
- Sandlings Forest SPA;
- Blackhall Heath SSSI;
- Snape Warren SSSI;
- Iken Wood SSSI;
- Tunstall Common SSSI;
- Gromford Meadow SSSI.

There are also numerous designated non-statutory sites within 2km of the route options, including ancient woodland, Community Wildlife Sites (CWS) and Nature Reserves.

Given the rural nature of the area the presence of protected species along the proposed route corridors cannot be discounted. The presence of the following protected species is likely:

- Mammals: badger, otter, water vole, dormouse and various species of bat.

[20] The Ramsar Convention (1971) in Wetlands of International Importance is an international treaty for the conservation and sustainable use of wetlands.

- Amphibians and reptiles: great crested newt, grass snake, slow worm, adder and common lizard.
- Notable fish: European eel and brown trout.
- Various Birds listed on Schedule 1 of the Wildlife and Countryside Act 1981 Ancient/ species rich hedgerow network BAP Priority Habitat.

2.9.5 Hydrology and water quality

Within 1km, the River Ore, runs northwest to southeast through the southerly part of the alignment, and is crossed by the existing A12 at Marlesford. The River Alde flows north to south through the northern part of the area and is crossed by the A12 at Stratford St Andrew. The lower reach of the River Ore, south of the existing A12, is known as the River Alde-Ore and has an extensive estuary, fed by the Rivers Alde and Butley. A drain, discharging to the River Ore flows from northwest to southeast through Little Glemham. The floodplains of the main rivers are generally broad, typical for the lower reaches of watercourses, but narrow at the point that they would be crossed by the route options.

The River Alde has been assessed as 'At Risk' under the Water Framework Directive. The sources of risk are diffuse source pollution, and, potentially, water abstraction and flow regulation. The River Ore is also assessed as being 'At Risk', the sources of risk identified as diffuse source pollution and physical or 'morphological' alteration.

Groundwater Protection Zones (GPZ) are found to the northwest of Little Glemham and Farnham. The area to the southeast of the road does not lie within a GPZ.

2.9.6 Summary

Key Observation

The number of environmental constraints to the north of the existing A12 severely restrict available route options for construction of a full length bypass to the north of the Four Villages.

A further few environmental constraints exist to the south of the A12. Studies undertaken by the County Council over the last decade have shown that some mitigation is possible, despite the Economic Case reporting adverse impacts.

Any bypass road constructed to the north would have to be significantly longer to avoid impacting protected areas, reducing the benefits of the scheme in terms of journey time savings and affecting its projected value for money.

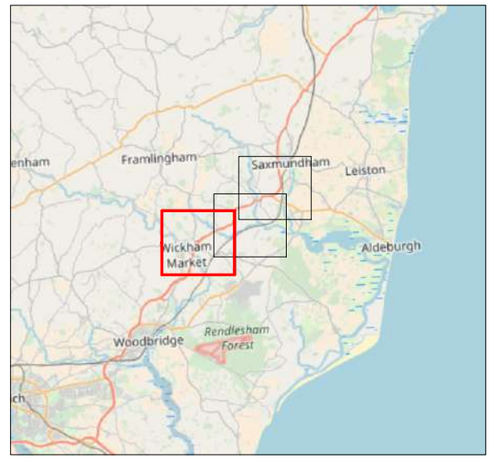
Key environmental constraints restricting construction of a new road to the north of the existing A12 include a large conservation area to the west of the village of Marlesford, based around numerous Grade 1 and 2 listed buildings in this area, likely blocking the initial section of any northern route option; several large areas of ancient woodland (also designated as wildlife sites) situated to the north of Marlesford and to the west of Farnham and Stratford St Andrew which would require significant re-routing of the proposed road, destruction of habitat (likely unacceptable); and various other grade 2 and 2 listed buildings in the path of probable route alignments to the north of the existing A12.*

FIGURE 0001

- Route option LB1d
- Route option LB1d 2km study area
- Route option LB2s
- Route option LB2s 2km study area
- 5m contour
- Special Protection Areas
- Sites of Special Scientific Interest
- Wildlife sites
- Ancient woodland
- Tree Preservation Orders
- Ancient, veteran and noble trees
- Conservation areas
- Scheduled monuments
- Registered parks and gardens

Listed buildings

- Listed building grade I
- Listed building grade II
- Listed building grade II*
- Special Landscape Area - Wickham Market area
- Area of Outstanding Natural Beauty
- Noise important areas
- Air Quality Management Areas
- Public rights of way
- Historic landfill
- Main rivers
- Flood zone 2
- Flood zone 3
- Planning applications (2013)



Rev.	Date	Purpose of revision	Drawn	Check'd	Rev'd	Appr'd
P00	18/12/2017	Initial Issue	FL	HW	XXX	XXX

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Project: A12 Suffolk's Energy Gateway

Drawing Title: Environmental constraints

Sheet 1 of 3

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FIGURE 0002

- Route option LB1d
- Route option LB1d 2km study area
- Route option LB2s
- Route option LB2s 2km study area
- 5m contour
- Special Protection Areas
- Sites of Special Scientific Interest
- Wildlife sites
- Ancient woodland
- Tree Preservation Orders
- Ancient, veteran and noble trees
- Conservation areas
- Scheduled monuments
- Registered parks and gardens

Listed buildings

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- Listed building grade II*
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Sheet 2 of 3

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FIGURE 0003

- Route option LB1d
- Route option LB1d 2km study area
- Route option LB2s
- Route option LB2s 2km study area
- 5m contour
- Special Protection Areas
- Sites of Special Scientific Interest
- Wildlife sites
- Ancient woodland
- Tree Preservation Orders
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- Conservation areas
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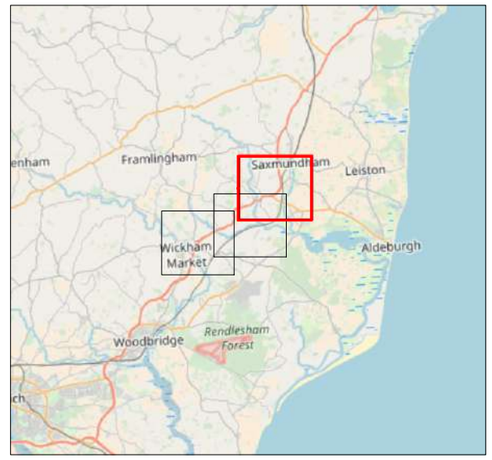

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Sheet 3 of 3

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3. Future situation

3.1 Introduction

This chapter describes the future transport situation in the study area. It should be noted that as option generation and assessment has been carried out over a number of years, previous studies such as the A12 Four Villages Study[21] made assumptions that were the best available at the time, but some of these will inevitably have changed. This chapter references:

- Planned growth and infrastructure changes describing the Central Case, without scheme case sensitivity tests and alternative scenario of investment at Sizewell C.
- Emerging details on housing options as part of the Suffolk Coastal District's Local Plan Issues and Options.

3.2 Planned growth and infrastructure changes

3.2.1 Central Case

Details of the forecast Central Case is provided in the *Forecasting Report* annex. This has been developed taking into account each relevant district council's best view of likely housing, employment and tourism growth alongside central assumptions of traffic growth in the National Trip End Model, with care taken to avoid double counting.

The Central Case assumes that there is no further development at Sizewell C given uncertainty around if, how and when it will be delivered. This has been treated as part of sensitivity tests and alternative scenarios for consideration in the *Economic Case*.

A detailed *Uncertainty Log* has been produced to support this forecasting – with this included in the *Forecasting Report*.

The resulting growth in total trips in the total Suffolk County Transport Model highway matrix is shown below in **Table 3-1**, for horizon years between 2016 and 2038.

	2016	2023	2025	2035	2038
AM peak hour total	140,685	152,428	155,322	168,468	172,348
% Change relative to 2016	-	8.35%	10.40%	19.75%	22.51%
Average INTER peak hour Total	114,634	126,648	129,873	144,120	147,949
% Change relative to 2016	-	10.48%	13.29%	25.72%	29.06%
PM peak hour total	150,302	162,290	165,308	178,897	182,778
% Change relative to 2016	-	7.98%	9.98%	19.03%	21.61%

Table 3-1 : Forecast increase in traffic in the Central Case Forecast within the SCTM – 2016 to 2038

[21] Studies have been undertaken in 2006, 2013 and 2014/15 by consultants AECOM and in their previous guise Faber Maunsell in conjunction with the Landscape Partnership, with these provided as annexes to this outline business case

3.2.2 'Without SEGway scheme' case

The 'without SEGway scheme' case has incorporated a baseline of infrastructure investment in Suffolk as a do minimum in both 2023 and 2038. These are identified below in **Table 3-2**.

Scheme	Location	Status	2023	2025	2038
Upper Orwell Crossing (Ipswich Wet Dock Crossing)	Ipswich	Committed	✓	✓	✓
Lake Lothing Third Crossing	Lowestoft	Committed	✓	✓	✓
Bury St. Edmunds Eastern Relief Road	Bury St Edmunds	Committed	✓	✓	✓
Haverhill North West Relief Road	Haverhill	Committed	✓	✓	✓
Beccles Southern Relief Road	Beccles	Committed	✓	✓	✓
Ipswich Radial Corridor transport improvements - Stage 1	Ipswich	Committed	✓	✓	✓
A12 East of Ipswich Junctions	Martlesham, Adastral Park (Phase 1, 2 and 3, Woodbridge, Foxhall	Committed	All except Adastral Park Phase 3	✓	✓
Bury St. Edmunds South East Relief Road	Bury St Edmunds	Committed	✓	✓	✓

Table 3-2 : Baseline of Infrastructure Investment

No minor improvements to the A12 between Wickham Market and Saxmundham are assumed in the without scheme case. Previous assessments of the performance of various options during the *Strategic Outline Business Case* and other studies have also assumed that the 'without SEGway scheme' case involves no minor improvements to the A12 between Wickham Market and Saxmundham.

3.2.3 Sensitivity tests

In view of the importance of the A12 to the tourism economy the Central Case incorporates the assessment of weekend benefits. As a sensitivity test, the *Economic Case* incorporates an assessment of the impact of not including these benefits in the Central Case.

Low and High growth variations on the Central Case have been identified for the detailed economic appraisal of both scheme options, with these results described in the *Economic Case*.

Both Waveney District Council and Suffolk Coastal District Council are at different stages of the development of their next Local Plan with consultation on both the level of growth and the location of it within both districts. Further detail is provided in the Local Plan Update section below (section 3.3).

EDF Energy is proposing to construct a new nuclear power station at Sizewell, known as Sizewell C, comprising two reactors, immediately to the north of the existing single reactor Sizewell B power station. This location was identified in 2011 by the Government's National Policy Statement for Nuclear Power Generation *(2011)*[22] as a potentially suitable site for a new nuclear power station because of its proximity to an existing power station (Sizewell B), the North Sea and its relatively isolated setting. The proposed location of Sizewell C, with surrounding local link roads and proposed route for construction traffic is shown in **Figure 3-1**.

[22] Department for Energy and Climate Change, National Policy Statement for Nuclear Power Generation, July 2011 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/47859/2009-nps-for-nuclear-volumeI.pdf, accessed 10 December 2017

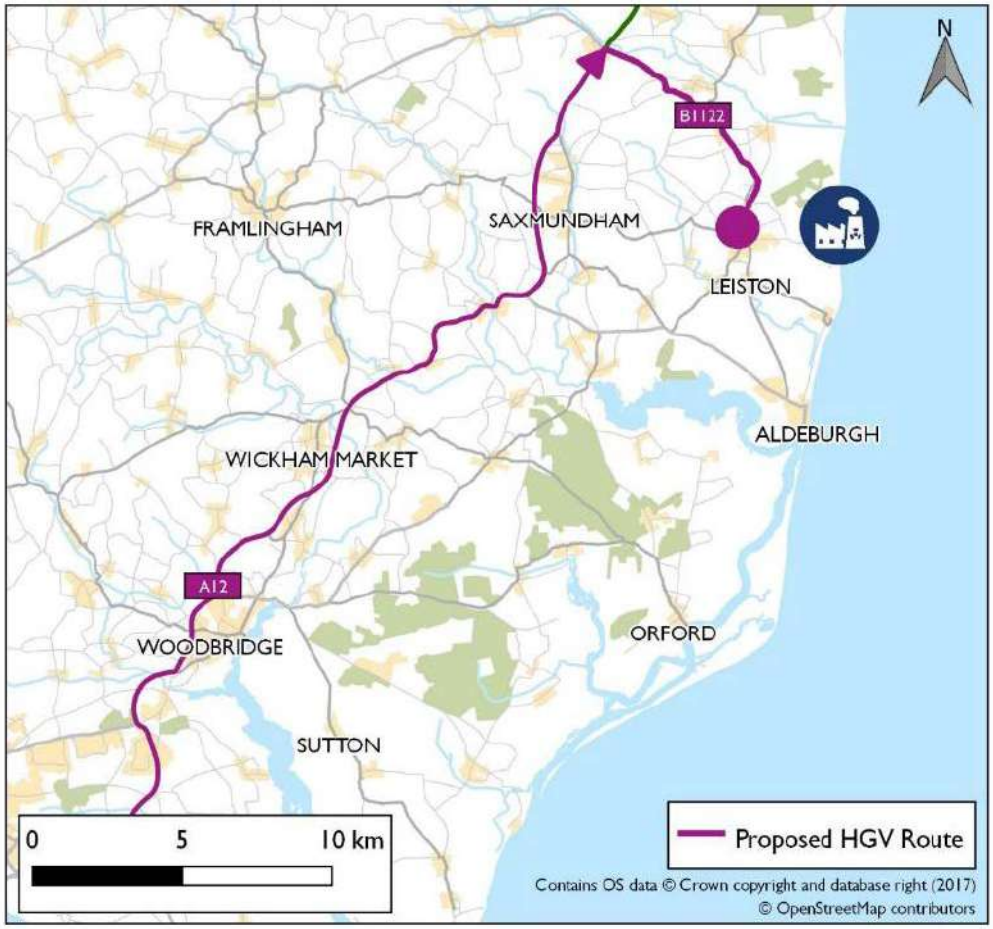


Figure 3-1 : Proposed location of Sizewell C with surrounding local roads, in relation to Leiston

The date when Sizewell C's construction will commence is not confirmed. EDF Energy is still to undertake its Stage 3 consultation for Sizewell C, followed by a period of time to develop and submit a Development Consent Order, moving to the examination, possible approval and Final Investment Decision, before construction can commence. This timetable needs to be considered alongside the timetable for the construction of SEGway.

Suffolk County Council in 2013, 2014 and 2015 commissioned consultants AECOM to study the impacts of Sizewell C traffic on the Four Villages (copies of these reports may be found as annexes to the Outline Business Case). This work assumed a date of 2020 based on publicly available information at the time, although this has now slipped. EDF Energy and China General Nuclear Power Corporation (CGN) agreed the Heads of Terms of a wider UK partnership. This included a commitment to work together on the development of a new nuclear power station at Sizewell, which would follow on from the construction of Hinkley Point C in Somerset which has a scheduled opening year of 2025.

The Sizewell C construction workforce is expected to involve 25,000 different roles over the lifetime of the project, with a peak of approximately 5,600 people plus another 500 off-site staff, whilst a permanent operational workforce of around 900 personnel would build up over the course of the construction phase to run the station post-commission. The ramp up of this workforce and the type of roles is identified in **Figure 3-2** below. The construction workforce equates to 7% of the current Suffolk Coastal District's current entire workforce.

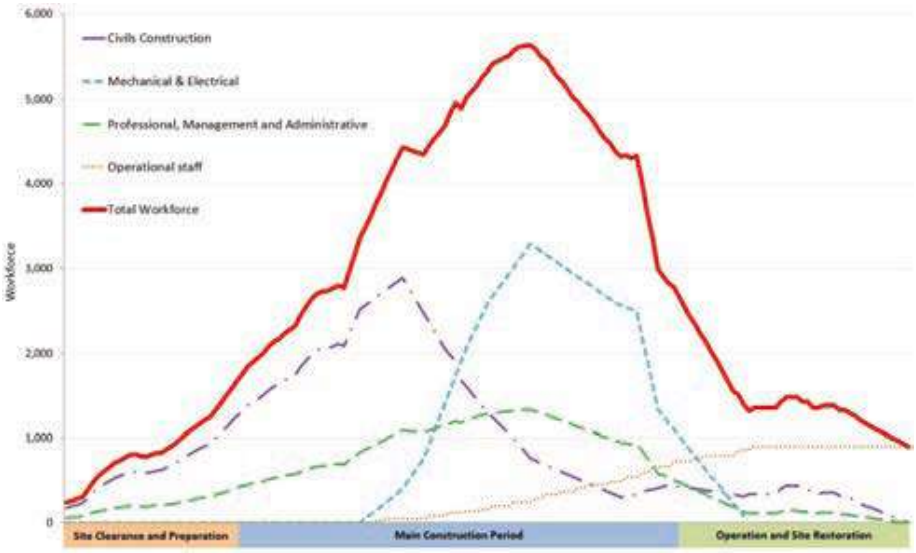


Figure 3-2 : Sizewell C construction labour demand curve – estimated workforce numbers. Source: EDF (2016): Sizewell C: Stage 2 Pre-Application Consultation Autumn / Winter 2016, p44

While some of the workers are expected to be based in campus accommodation close to the site, Suffolk County Council still expect a high volume of workers to travel to and from the construction site on a daily basis for several years, together with significant movements of HGVs, which will add further stress to the local transport network. The roads closest to the proposed Sizewell C location are primarily single carriageway B-roads which link to the A12 north-south corridor between Lowestoft, Ipswich and the A14.

The A12 north-south corridor itself would be used extensively during construction by HGVs, and by cars and buses associated with the construction workforce. EDF Energy's Sizewell C Transport Strategy (2012)[23] notes that in the initial traffic modelling of Sizewell C impacts, a number of scenarios of HGV movements have been considered, ranging from between 100 to 300 average HGV deliveries per day to the construction site at peak construction (representing between 200 and 600 two-way HGV movements). Recent modelling from EDF's consultants provided to Suffolk County Council and Jacobs in 2017 shows an extra 40 two-way HGV movements on the A12 through Farnham in the AM peak (0800-0900) in an assumed 2025 horizon year.

EDF Energy's Transport Strategy (2012) predicts that approximately 15% of HGV traffic would route via the A12 from the north, with the remaining 85% routing via the south, which is still broadly replicated in the most recent modelling work. The majority of HGV traffic associated with Sizewell C will travel through the village of Farnham, including the 'Farnham bend', notably increasing the likelihood of HGVs meeting at the bend and causing traffic disruption. It will therefore have a significant impact on the section of A12 covered by the SEGway.

On behalf of Suffolk County Council, consultants AECOM assessed the impact of Sizewell C construction traffic on the A12[24] at the proposed location of Suffolk's Energy Gateway, based on information made available as part of the Sizewell C Stage 1 consultation. The study concluded that the A12 through Farnham, Stratford St Andrew, Little Glemham and Marlesford would have to carry more than 1,800 additional vehicles per day over a ten-year period because of the construction and operation of Sizewell C.

The estimated construction period for Sizewell C is approximately ten years. Suffolk County Council has serious concerns about safety during this phase. There are houses on either side of the narrow A12 carriageway, with little footway space to act as a safety margin in the event of a vehicle collision, or a vehicle mounting the footway. This clearly also has pedestrian safety implications.

Suffolk County Council also note that the Sizewell C construction impacts cannot be considered a temporary phenomenon for the local communities given the decade long duration. Although local residents will experience impacts from the increased traffic levels, all those using the A12 for business, commuting or tourism will also be affected.

[23] Sizewell C Transport Strategy and Supporting Information, EDF Energy, 2012, http://sizewell.edfenergyconsultation.info/wp-content/uploads/2016/01/Stage-1-Transport-Strategy-Supporting-Information-1.pdf accessed 10 December 2017
[24] A12 Four Villages Bypass Study – Sizewell C Impacts Technical Note, AECOM, 2013

Once the new nuclear plant is fully operating, each of the three reactors at the site will require outage maintenance every 18 months, resulting in a rolling outage programme of approximately 6 weeks every 6 months. Each outage is accompanied by a large influx of approximately 1,000 staff and additional traffic.

EDF Energy's Sizewell C Stage 2 Pre-Application Consultation Report (2016) [25] describes the scale of the infrastructure likely to be required to mitigate the impacts of the power station's construction and ongoing operation.It outlines plans to "optimise local benefits that directly arise from the construction and operation of the power station". Modelling carried out by EDF Energy concludes that additional HGVs along the A12 during the construction of Sizewell C would "increase the frequency of large vehicles meeting at Farnham bend, and so could exacerbate existing safety concerns" as well as lead to increased congestion. In addition, the consultation has sought to take into account local residents' concerns with regards to severance when assessing the three proposed options for mitigation of traffic volumes in the four villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford. Possible solutions included:

- Provision of Park and Ride site(s) for construction staff
- Rail and maritime freight solutions for construction materials
- Online improvements to the B1122
- A12 / B1122 junction improvements in Yoxford
- Doing nothing to the A12 in the Farnham / Stratford St Andrew areas
- Straightening of Farnham Bend
- Provision of a One Village Bypass of Farnham
- Provision of a Two Villages Bypass of Farnham and Stratford St Andrew (requested by Suffolk County Council as a minimum).

EDF Energy is still to undertake its Stage 3 consultation for Sizewell C, followed by a period of time to develop and submit a Development Consent Order, moving to the examination, possible approval and Final Investment Decision, before construction can commence. This timetable needs to be considered alongside the timetable for the construction of SEGway.

In developing the programme, the Project Delivery Team has considered the scheme's relationship with EDF Energy's Sizewell C plans. In order to secure a private sector contribution from EDF Energy, solutions have to be found for the public sector to forward fund SEGway. The scheme has to be affordable and should not delay SEGway's ability to solve longstanding problems and deliver wider benefits for the East Suffolk economy beyond just the energy industry.

EDF Energy was consulted as part of Suffolk County Council's SEGway stakeholder engagement process in October 2017. EDF Energy has been undertaking its own consultations and examining traffic mitigation options for the A12 as part of the Sizewell C project. EDF Energy advised that it supports the objectives of the SEGway scheme in delivering economic growth in East Suffolk and enhancing local residents' quality of life.

EDF Energy has acknowledged that it would be prepared to make a proportionate financial contribution towards the SEGway scheme, in lieu of providing an alternative highway scheme along the A12 (identified as options within EDF Energy's Sizewell C Stage 2 consultation), which would be required to enable its delivery of the Sizewell C project. It has been accepted by Suffolk County Council that the Sizewell C project would not justify the delivery of a four village bypass as mitigation in its own right. Therefore any contribution by EDF Energy towards the SEGWay scheme would be proportionate to the level of contribution necessary to mitigate the impacts of the Sizewell C project, and is contingent on the SEGWay scheme being in place to support the construction of Sizewell C.Suffolk County Council is still in discussion with EDF Energy what a proportionate mitigation for Sizewell C would be, but believes that a two village bypass would be the minimum mitigation.

However, in the interim whilst the SEGway scheme awaits approval, EDF will continue to develop and promote its own alternative scheme, to enable the application for development consent for the Sizewell C project to proceed.

A copy of EDF's Letter of Support is enclosed in Appendix A.

The *Economic Case* has therefore considered sensitivity tests associated with Sizewell C including:

[25] http://sizewell.edfenergyconsultation.info/wp-content/uploads/2016/11/EDF_SZC_Stage2_SumDoc.pdf, accessed 18 June 2017

- Additional construction traffic in intermediate assessment years of 2025 and 2035 using information supplied by EDF to the Project Delivery Team in summer 2017.
- An alternative 'without scheme' case that includes Suffolk's County Council's view of the likely minimum infrastructure mitigation to be funded by EDF, namely a Two Villages bypass of Farnham and Stratford St. Andrew.
- The impact of a potential range in private sector developer contribution (broadly representative of the costs of a one village bypass to a two village bypass) on the scheme's value for money
- The wider economic impacts in terms of GVA associated with helping to realise the 25,000 job roles associated with Sizewell C.

Recognising that there is significant employment benefit associated with the project if the problems can be mitigated, Chapter 8 references these supplementary wider economic benefits and the amount that the SEGway scheme could reasonably claim, given that Sizewell C is of course also reliant on other infrastructure to achieve Development Consent. In addition, there is wider support for Government policies around clean growth and energy security – described in the strategic fit with national policy in Section 7.2.

Finally, the *Economic Case* has also considered sensitivity tests associated with induced demand created by SEGway. Alongside the impact on journey times and vehicle operating costs of additional demand created by the road, consideration has also been given to the likely purpose of this traffic. Special attention has been given to the locally important tourism industry and the potential GDP benefit to the local economy of increased visitors and their spending as part of this variable demand sensitivity test. A summary of these tourism benefits are presented in section 8.3.

3.3 Land use and planning context

Both Suffolk Coastal District Council and Waveney District Council have been active with the update of their Local Plans over 2016 and 2017. This builds on adopted Local Plans and the East Suffolk Growth Plan (2014).

3.3.1 Employment land

Within Suffolk Coastal district there are currently two active planning applications for significant new employment sites (shown below). The first of these is planned at the former RAF Bentwaters site in Rendlesham, specified as new employment and commercial buildings in B1, B2 and B8 use. The second significant application relates to Carlton Park Industrial Estate in Saxmundham and is for the erection of a new employment development with a total site area of 3000 sq. m. There is the potential for SEGway to improve accessibility to both of these schemes, particularly Carlton Park Industrial Estate in Saxmundham to the north, which is in close proximity to SEGway.

Furthermore, reference has been made to Bentwaters Studio a proposed film studio and shooting location to the south of the scheme. With a general improvement in transport accessibility in and around Suffolk associated with SEGway, there may be a potential for the studio to benefit from additional shooting days as people's perception improves. The location of these sites is shown below (**Figure 3-3**).

Figure 3-3 : Employment sites in the vicinity of the study area

The recently published 2017 Suffolk Coastal District Local Plan Issues and Options predicts significant growth in numbers of jobs across the wider Suffolk area in the period from 2014-2036. **Table 3-3** provides this data.

Local authority	Total number of jobs		Change 2014-2036	
	2014	2036	Number	%
Babergh	39,005	42,645	3,640	9.3
Ipswich	75,195	94,235	19,040	25.3
Mid Suffolk	43,895	50,345	6,450	14.7
Suffolk Coastal	60,510	68,450	7,940	13.1
Total Ipswich Economic Area	**218,605**	**255,675**	**37,070**	**17.0**

Table 3-3: Draft employment growth figures for Ipswich and Suffolk Coastal, 2014-2036. Source: SCDC Local Plan Issues and Options consultation document - East of England Forecasting Model (EEFM) (August 2016)

The 2017 Waveney First Draft Local Plan aims to deliver an additional 5,000 jobs within the district in the period from 2014-2036, utilising an additional 43 hectares of employment land for B1/B2/B8 uses. Of specific interest is Policy WLP2.16 - Land at South Lowestoft Industrial Estate, a 19.99-hectare site south of the existing industrial estate and part of the Great Yarmouth and Lowestoft Enterprise Zone and was originally allocated in the Site Specific Allocation Development Plan Document in 2011. The First Draft Local Plan states that there is still likely to be demand in South Lowestoft, particularly given its good links to Sizewell to the south and the existing cluster of businesses present in the area. The existing industrial estate has low levels of vacancies and a good proportion of units remain in employment use (B1, B2, and B8 uses).

3.3.2 Housing

As noted, updated draft 2017 versions of Local Plans are currently being produced by Ipswich Borough Council, Suffolk Coastal District Council and Waveney District Council, with these at different stages of development. Houses built, remaining commitments, homes allocated and expected to be delivered in the current Local Plan period (where applicable), draft allocations and allocations to be developed are shown in **Table 3-4** below for the time period 2014-2036.

Local Authority	Homes built 2014-2017	Existing housing commitments	Homes allocated in Local Plan expected to be delivered in plan period	Draft Local Plan allocation (not yet adopted)	Homes not currently allocated	Total growth 2014-2036
Suffolk Coastal	1,541	3,145	3,780 (including 2,000 at Adastral Park)	-	1,645	10,111
Ipswich	1,222	2,080	4,987	-	3,131	11,420
Waveney	535	2,603	-	5,881	-	9,019

Table 3-4: Draft objectively assessed need for housing figures for Suffolk Coastal, Ipswich and Waveney. Source: SCDC Local Plan Issues and Options consultation document - East of England Forecasting Model (EEFM) (August 2016)

It should be noted that the above figures are subject to change as Suffolk Coastal District Council, Ipswich Borough Council and Waveney District Council progress their Local Plan Reviews in 2018.

The **2017 Suffolk Coastal Local Plan Issues and Options**[26] identifies three growth **scenarios** and three alternative **options** for proposed locations of new housing across the district to 2036 (**Figure 3-4** below). These were consulted on between 18 August and 30 October 2017.

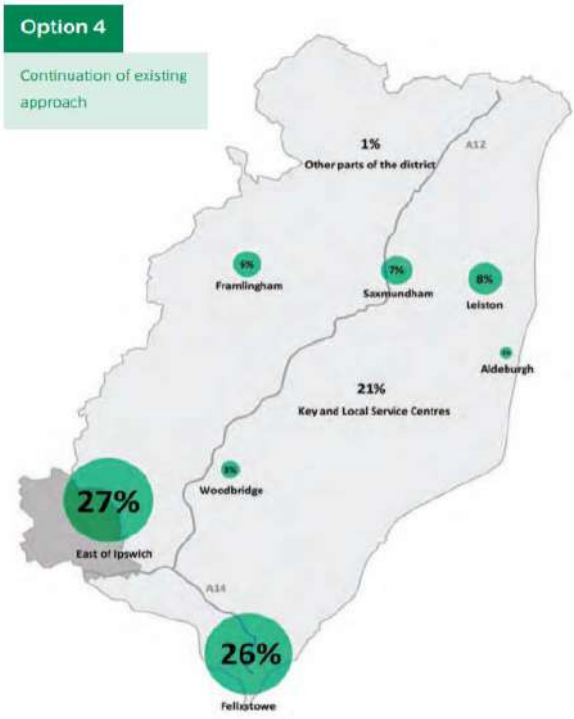
Scenario A – Baseline: Objectively Assessed (Housing) Need (OAN) – with figures as above in **Table 3-4**, based on a continuation of recent trends and modelling forecasts.

Scenario B - OAN + 20%: Seeks to increase job targets based on an aspiration for significant economic development to take place covering growth areas identified by the New Anglia LEP. Significant economic development opportunities such as Sizewell C, offshore energy and further support for established sectors such as the Port of Felixstowe or ICT could realise this increase. In an economic growth led scenario, investment is required to ensure that growth in new homes keeps at a pace to not constrain labour supply.

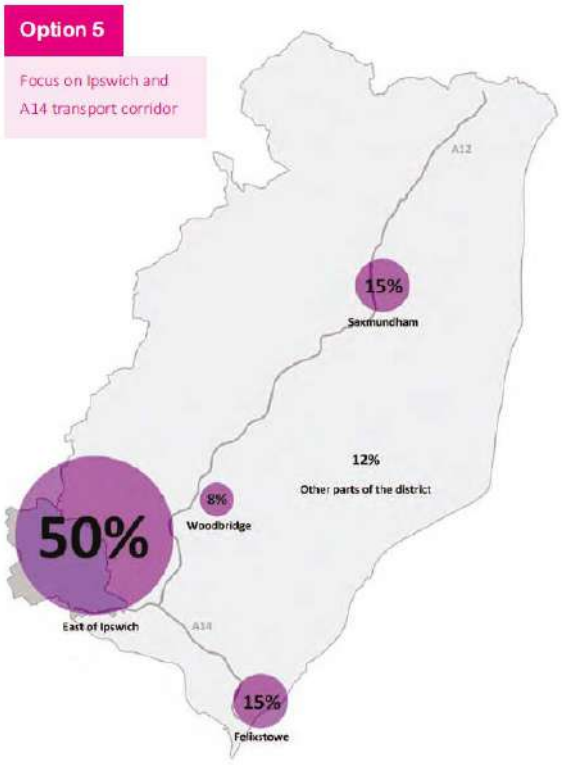
Scenario C - OAN +40%: This is based on the Norfolk and Suffolk Devolution Agreement (June 2016) aspirations to substantially increase housing delivery with new infrastructure to support it hand in hand. While not resolved, the plans represented a 95,000 homes uplift for Suffolk with Ipswich and surrounding communities well placed to deliver the substantial uplift in targets. This scenario is intended to deliver key infrastructure projects across the Ipswich Housing Market Area and help meet Government objectives to deliver more housing.

[26] Suffolk Coastal District Local Plan Review, 2017 http://www.eastsuffolk.gov.uk/planning/local-plans/suffolk-coastal-local-plan/local-plan-review/

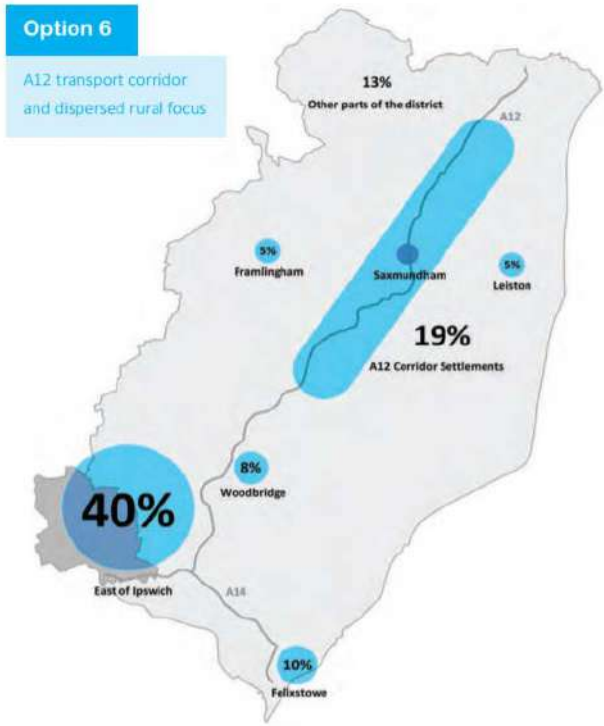
Option 4 (right) suggests a continuation of the current Local Plan (2013) approach, focusing 51% of growth on major centres to the east of Ipswich and around Felixstowe, with the majority of the remainder spread across larger market towns including Saxmundham, Aldeburgh and Framlingham. However, the consultation documents note that this strategy places a disproportionate strain on some settlements whilst others receive no new development.



Option 5 (below left) focuses on Ipswich and the A14 transport corridor to Felixstowe. This option proposes limited development in Saxmundham and Woodbridge to further boost investment into rail connections between these settlements and Ipswich as well as providing an alternative location for development on a strategic scale.



Option 6 (right) suggests a change in direction, to focus on the A12 corridor and some of the nearby rural settlements across the district to which the A12 enables access. The Plan notes that promoting this development scenario related to the A12 corridor could provide opportunities to improve road and rail connections between Ipswich and Lowestoft.



Identifying and encouraging a level of development in the settlements close to the A12 provides a greater opportunity to directly mitigate growth related impacts, and also provides further opportunities for new growth to sustain the limited services and facilities in the rural parts of the district.

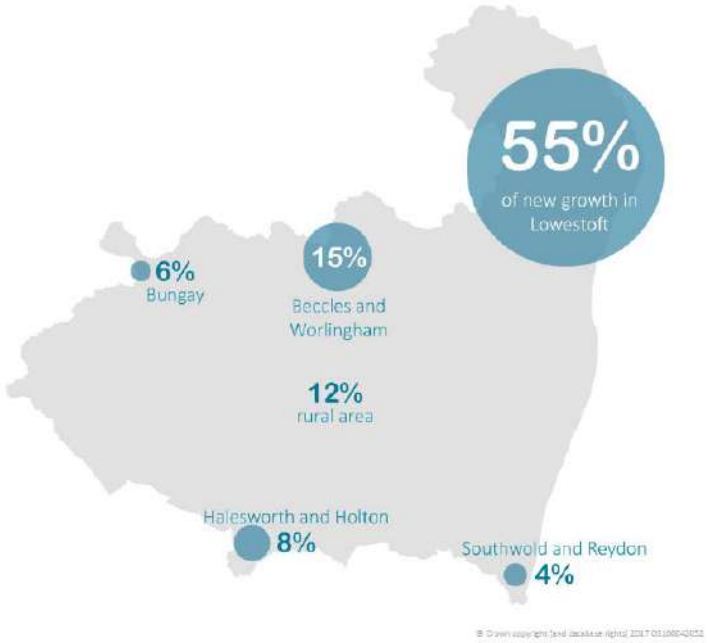
Figure 3-4: Alternative options for the distribution of housing growth. Source: Suffolk Coastal Local Plan Issues and Options consultation document 2017.

Applying these patterns of development to the three growth scenarios results in a wide range of potential additional housing growth in the following areas of between 855 and 4,380 homes. These are all locations served by the A12, with the SEGway scheme more closely linked with unlocking housing in Saxmundham, Leiston and Aldeburgh, supporting access to jobs and leisure / tourism opportunities. It should be noted that these figures are on top of existing commitments (permissions and allocations) not yet delivered (4,201 homes):

- East of Ipswich (444 to 2,845 homes)
- Woodbridge and Melton (49 to 455 homes)
- Framlingham (82 to 341 homes)
- Saxmundham and A12 Settlements (115 to 1,081 homes)
- Leiston (82 to 455 homes)
- Aldeburgh (16 to 57 homes).

Note: Given different options result in a different spread of homes, the minimum and maximum figures do not add to 855 and 4,380 respectively.

Moving to **Waveney District Council's First Draft Local Plan**[27], (**Figure 3-5**) indicates the proposed locations for housing growth within Waveney consulted on in summer 2017. A final draft plan will be published and then submitted for Examination in late spring 2018, with adoption anticipated by the end of 2018.



The majority of housing growth in Waveney is proposed for Lowestoft, which is the economic centre of the district and is expected to provide significant employment growth opportunities through the Lowestoft and Great Yarmouth Enterprise Zone. This also contributes to the housing need for the wider Housing Market area. Existing journey times and commuting patterns are such that improvements to the A12 through SEGway is unlikely to make a significant impact on the delivery and take-up of homes in Lowestoft, although reduced journey times to Ipswich and destinations to the south will nonetheless be beneficial for a wide range of journey purposes.

Figure 3-5: Waveney total housing growth 2014-2036 by settlement. Source: Waveney First Draft Local Plan 2017, p.29

As indicated in **Table 3-5** below, in the far south of the district, development in Halesworth, Southwold / Reydon and neighbouring villages is more closely linked to the SEGway scheme.

Settlement	Remaining existing Local Plan housing commitments	Additional growth to 2036 (Waveney First Draft Plan)
Halesworth and Holton	262	440
Southwold and Reydon	50	250
Wangford	0	38

Table 3-6 : Waveney District Local Plan – existing commitments and proposed additional growth to 2036 for settlements most likely to derive benefits from the SEGway scheme

[27] Waveney Local Plan – First Draft Plan – July 2017, Waveney District Council http://www.eastsuffolk.gov.uk/planning/local-plans/waveney-local-plan/

Committed homes within both Suffolk Coastal and Waveney districts' adopted Local Plans which are planned for completion prior to SEGway construction commencing (2021) are indicated in **Table 3-7** below alongside those that are likely to be delivered at a later date.

Settlement	Committed sites for delivery by 2021		Committed sites for delivery beyond 2021	Allocated sites/Made NP's/subject to S106 agreement	Total
	Homes on sites of 5+ units	Homes on sites of 1-4 units			
Halesworth and Holton	74	25	163	-	**262**
Southwold and Reydon	35	13	2	-	**50**
Leiston	47	18	-	110	**175**
Aldeburgh	13	12	-	10	**35**
Woodbridge and Melton	236	28	-	0	**264**
Framlingham	414	22	-	4	**440**
East of Ipswich	236	56	-	395	**687**
Saxmundham and Settlements	192	50	-	75	**317**

Table 3-7 : Homes within Suffolk Coastal and Waveney districts planned for completion by 2021 and beyond this date, correct as of March 2017. Source: Suffolk Coastal District Council and Waveney District Council, October 2017.

The Wider Impacts analysis has not explicitly quantified the attribution of potential homes associated with the Local Plan reviews to SEGway given that Suffolk Coastal District Council is still consulting on Issues and Options and Waveney District Council on its First Draft Local Plan. Greater certainty on the benefits that SEGway could provide in this regard will be provided as part of the Full Business Case update in 2019/2020.

Key Observations

Suffolk Coastal District's Local Plan review is at the Issues and Options stage and provides a range of possible outcomes for economic growth and where it is located, depending on housing need, aspirations to realise the LEP's key growth sectors and whether the housing numbers from the unresolved Devolution Deal are realised.

This could include significant housing growth along and close to the A12 corridor, in communities such as Saxmundham and Leiston (potentially a range between 200 to over 1,500 homes) albeit with a need for infrastructure (such as improvements to the A12) to mitigate the impacts. More certainty on the scale and location of growth and whether certain options are more likely to realise specific growth scenarios will be known in 2018 / 19.

Waveney District's Council's First Draft Plan has recently consulted on its preferred options for growth, with allocations for additional employment land associated with the Lowestoft and Great Yarmouth Enterprise Zone and an additional 700+ homes in communities in the far south of the district, most closely linked to deriving benefits from the SEGway scheme.

3.3.3 Next steps

Updates to the relevant Local Plans are still in development. Greater certainty on the scale and location of growth is expected in 2018 / 2019. It is envisaged that this section and Chapter 8's summary of the wider economic benefits that may accrue to the region will be revisited at the Full Business Case stage.

4. Need for intervention

4.1 Problems and issues

4.1.1 Introduction

This section summarises the current and future transport-related problems identified along the route and surrounding communities.

The A12 presents a number of barriers to growth. Businesses confirm that journey times are unreliable. This is due to stretches of single carriageway, a large number of side roads and reduced speed limits through communities at several locations along the route, in addition to significant and unpredictable delays associated with seasonal agricultural and tourism traffic.

4.1.1 Business concern around congestion, journey time reliability and length

The section of A12 passing through the villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford has been identified as a congestion pinch point. The narrow bend in Farnham alongside a lack of dedicated turning lanes (the carriageway space does not exist) for right turning traffic into numerous side roads and roadside businesses contributes to periodic episodes of delay and unreliable journey times, exacerbated in summer by larger agricultural vehicles and caravans as well as the daily flow of HGVs.

Suffolk County Council's engagement with businesses in 2016 revealed the importance of undertaking action for local businesses. The most significant issues for businesses are the predictability of journey times and the perception that the area is unattractive for investment or business expansion. There was also concern about the length of business-related journey times (deliveries, visiting clients) and commuting times for staff.

70% of respondents indicated that improvements to Suffolk's Energy Gateway would make a *Very significant* or *Significant* difference to their organisation as shown in **Figure 4-1** below. Just under 10% of respondents indicated that a failure to act would threaten the continued existence of their firm.

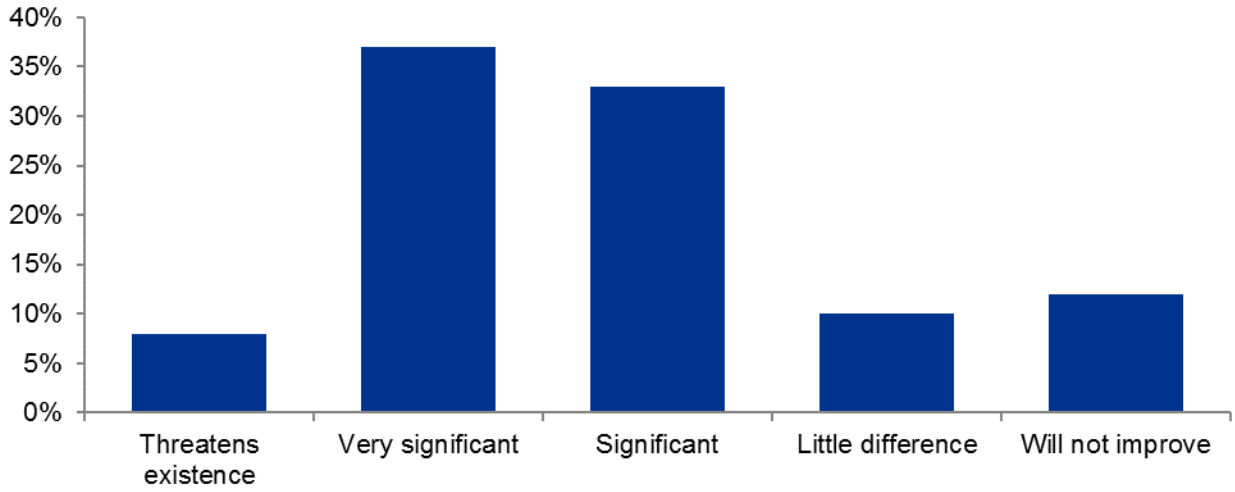


Figure 4-1: Potential impact to businesses of improvements to the A12 in the Study Area

4.1.2 Seasonal variability in traffic volumes

Section 2.7.3 has demonstrated the importance of the tourism industry to East Suffolk's economy. It has also demonstrated the very nature of the tourist offer. A focus on long weekend breaks with trips to a dispersed set of natural and cultural attractions along the coastline creates a reliance on the private car, with few public transport alternatives. This is manifest in the seasonality in traffic flows shown in Section 2.7.4, with average

weekend flows in summer higher than weekday flows between October and March. The A12 is effectively operating above capacity[28] for a new rural single carriageway 'A' road for 6 months of the year, 7 days a week.

4.1.3 Perception of the area by inward investors and leisure visitors

Section 2.8.1 noted the findings of business engagement. This revealed that businesses' second most significant issue associated with the A12 in East Suffolk is a perception that the area is unattractive for investment or business expansion.

Section 2.8.2 noted the findings of tourism research. Suffolk has many assets (e.g. the Heritage Coast of East Suffolk as one of the top tourist destinations; the coast as one of the best things about Suffolk) yet the A12 (which should be acting as a gateway to tourism opportunities) is described as one of the worst things about Suffolk. The New Anglia SEP also recognises the linkages between accessibility and the prospects for tourism.

4.1.4 Lack of travel choice and resilience

Section 2.6.1 noted that there was a lack of network resilience with this road the sole major north-south highway through this area of Suffolk resulting in further traffic issues due to the absence of viable alternatives. Therefore, all users are constrained to use the A12, with limited options to divert to avoid maintenance, collisions or slow moving local agricultural vehicles.

Alongside the A12 road corridor, the East Suffolk Railway Line plays an important role in serving communities, tourism and other businesses in East Suffolk. Recent investment in the line through a new passing loop at Beccles has enabled the doubling of frequency of services between Ipswich and Lowestoft (hourly), with significant passenger increases recorded at intermediate stations such as Woodbridge (52% increase in four years). New rolling stock due in 2018 will increase capacity along the line. Despite this, more needs to be done to reduce journey times, and modernise the route to enable it to support economic growth and tourism.[29]

Solving problems on the A12 are complementary to improving the railway, with both required to enable the economic potential and connectivity of the region to be realised.

4.1.5 Road safety

Section 2.7.7 noted that there have been a relatively high number of accidents on the scheme section of the A12 over the last five years of data. Accident hotspots have been identified at two key locations along the route, as well as various A12 side road junctions:

- The A12/ A1094 junction, rated seventh most serious for accidents in Suffolk
- The southern approach to the A12/ Great Glemham Road junction in Farnham.

In addition to the direct safety impact on those involved in collisions, accident impacts include financial costs associated with the police, insurance and court proceedings. Delays associated with accidents contribute to costs incurred for businesses and commuters, reduced journey time reliability and increased stress for road users.

The performance of this section of the A12 is worse than is expected on average for an older rural single carriageway 'A' road.

4.1.6 Community severance

Section 2.6.4 noted specific problems for non-motorised users including community severance. This is defined as the separation of residents from the places they visit within their community. This can be caused by a busy road or other transport barrier. The communities of Farnham, Stratford St Andrew, Little Glemham and Marlesford experience such severance, because of traffic on the A12 corridor. UK Highways industry guidance (Design Manual for Roads and Bridges) generally defines community severance to be "severe" where AADT

[28] According to Design Manual for Roads and Bridges (DMRB) the recommended opening year flow limit is 13,000 vehicles AADT for a single carriageway road.
[29] Suffolk County Council (2015): *Suffolk Rail Prospectus.*

flows are in excess of 16,000 – a figure exceeded by the A12 in this location. The narrow footways add to safety concerns and contribute to making walking an unattractive option. Marlesford Parish Council noted the impact the A12 has on access to local public transport, due to the difficulty for pedestrians crossing the A12 on foot to reach local bus stops.

The heavy flow of HGVs and LGVs (one-fifth of all traffic in 2014) and higher flows in the summer months, when people are more likely to be using public rights of way adjoining and crossing the A12 add to community severance.

Community severance due to the A12 has several undesirable impacts:

- it makes non-car modes of travel such as walking and cycling less attractive;
- it reduces people's access to local services; and
- it creates a physical separation between and within the communities, and between the communities and the surrounding countryside.

4.1.7 Air quality and noise

The environmental context for the road was described in **Section 2.9.** It noted that an AQMA was declared in the village of Stratford St. Andrew in June 2014, due to an exceedance of the annual mean nitrogen dioxide objective. A large proportion of the emissions was due to traffic from the A12, including heavy vehicles.

Communities along this section of the A12 also experience noise and vibration impacts due to the volume and proximity of traffic.

4.1.8 Future growth opportunities and challenges

Section 3.2 noted an alternative scenario for consideration in the *Economic Case* - the potential construction of Sizewell C nuclear power station. EDF undertook a phase 2 consultation in 2016/17, with the current expectation that subject to the achievement of a Development Consent Order and a Final Investment Decision, construction would likely commence in the mid-2020s. Suffolk County Council's previous analysis has noted that this is likely to result in high volumes of two-way vehicle movements for personnel and freight during both the construction process and to a lesser extent, the power station's operation. This will likely result in increased traffic flows on the A12, exacerbating all existing transport related problems along this stretch of the A12. Specific mitigation measures attributable to the power station have not yet been agreed, although as noted in Appendix A EDF Energy is supportive of what Suffolk County Council is trying to achieve with the SEGway scheme.

Section 3.3 described alternative growth locations and growth scenarios for consideration through the Local Plan process. This could provide an opportunity to capitalise on investment in the SEGway through potentially earmarking more development for this corridor in the plan period to 2036, and/or helping to realise higher growth in the District as a whole. Further detail will be available in 2018/19 for the Full Business Case update and as such there is uncertainty as to the level of wider economic impacts that the scheme could support. Without SEGway investment the Councils will need to source other means to provide mitigation and support for economic growth.

4.2 Underlying drivers or causes

Table 4-1 summarises the problems identified on the 8km route between Saxmundham (A12/A1094 junction) and Wickham Market (A12/B1078 junction), and their underlying causes.

Summary problem	Underlying cause
Congestion pinch-points with resulting impacts on journey time reliability and length	The narrow, single carriage section of road experiences unpredictable traffic congestion, particularly at the 'Farnham bend', where two HGVs cannot pass, and adjacent side roads cause delays. The recommended capacity for a single carriageway (13,000 vehicles) is exceeded Monday to Sunday throughout spring and summer.
	A high number of side roads, variable speed limits, lack of overtaking opportunities and unpredictable delays associated with seasonal agricultural and tourism traffic. Businesses have highlighted the importance of both of these problems as a barrier to growth
Seasonal variability in traffic volumes	The tourism sector makes a major contribution to East Suffolk's economy. The season is relatively long from April to September, with a particular emphasis on long weekends and travel to a dispersed range of nature and culture related attractions along the coast where use of the private car is favoured. This results in the busy Friday evening peak period and June to September weekend flows higher than those experienced in the working week between October and March.
Perception of the area from inward investors and leisure visitors	Business engagement reveals that the A12 causes an unfavourable perception of the area as suitable for inward investment, because of the standard of the road and the traffic problems noted here. The 2015 Destination Research report identified the Heritage Coast of East Suffolk as one of the top tourist destinations; the coast as one of the best things about Suffolk; and the A12 (which is the effective gateway to tourism opportunities) as one of the worst things about Suffolk.
Poor resilience of the corridor	Accidents on the single carriageway section of the road cause congestion and significant delays. Predictable events such as increased seasonal traffic also have a profound effect. A lack of alternative routes and modal choices contributes to the lack of resilience.
Road safety	There have been a relatively high number of accidents on the scheme section of the A12 in recent years, with several accident hotspots, most notably the A12/A1094 junction which is rated as the seventh most serious for accidents in Suffolk.
Community severance	The current A12 corridor severs local communities and disrupts and limits local residents' access to services and social networks. Current severance can be categorised as "severe".
Air quality in Stratford St Andrew	An Air Quality Management Area (AQMA) has existed on the route in the village of Stratford St Andrew since June 2014 due to elevated NO_2 levels, 80% of which results from vehicle emissions.
Future growth opportunities and challenges	Further growth along the corridor in housing, employment and the tourist industry. Potentially high volumes of two-way vehicle movements for personnel and freight during both construction and to a lesser extent the operation of Sizewell C. This will likely result in increased traffic flows on the A12 corridor, exacerbating all of the above problems for businesses, visitors and residents. Planned well and with appropriate mitigation and encouragement then this growth should help to support the Economic Strategy for Norfolk and Suffolk, District Council's Local Plan and County Council's Local Transport Plan aims and aspirations, and support the delivery of wider economic benefits from homes and jobs

Table 4-1 : Route problems and underlying causes

Key Observation

Even if no improvements are made to the existing situation, traffic levels on this section of the A12 are expected to increase, exacerbating current issues. This will be further impacted by increase in traffic associated with growth in the local population and economy and the potential development of Sizewell C power station in the mid-2020s. The flip side of these growth related problems is that planning well and delivering appropriate mitigation early and in advance of absolute need will help to make a strong contribution to the Economic Strategy for Norfolk and Suffolk, Local Plans and Local Transport Plan aims and aspirations – delivering benefits from homes and jobs as well as quality of life.

4.3 Impact of doing nothing

If left unaddressed, the current issues identified above would all be exacerbated over time as the demand for transport on the strategic A12 corridor increases with the following potential consequences:

Local economic growth across the New Anglia region will be inhibited and impact many of the important sectors within the area.

- Impacts to business growth in areas such as the Lowestoft Enterprise Zone and Adastral Business Park at Martlesham Heath
- Consequences for the success of East Suffolk's growing and regionally significant tourism industry. Tourism depends on an efficient transport network to attract and retain visitors to the diverse yet dispersed number of attractions along the coast. Whilst this has been a success story in recent years, the very nature of the tourist market and its reliance on the private car will constrain future growth if nothing is done.
- Some (10%) businesses have stated that they may leave the area if there is no improvement to accessibility and journey reliability.
- Congestion and journey unreliability will increase due to natural traffic growth, seasonal agricultural and tourism impacts and the potential future development of Sizewell C.
- The delivery of new homes on which the realisation of economic growth aspirations also depend, will also be constrained.
- The potential regeneration benefits to towns within Waveney district which would benefit from enhanced connectivity, will be significantly reduced.

Community severance will remain (and increase) due to increasing traffic and congestion issues.

Air quality issues, including the AQMA in Stratford St Andrew, will remain and increase in the villages along the current A12 route.

Sizewell C construction and operation will cause significant impacts on the existing A12 as a result of high numbers of HGV movements negotiating narrow bends and sections of the road with reduced speed limits, reducing average speeds through the single carriageway section and increasing congestion and journey unreliability.

The identification of the above current and future transport related problems and their underlying causes as well as the magnitude and distribution of the impacts associated with them, clearly establishes the need for significant intervention in the A12 corridor.

5. Scheme objectives

5.1 Intervention-specific objectives

The core aim of the project is ***"to enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents".*** This represents a recognition that Suffolk County Council, Suffolk Coastal District Council and Waveney District Council are working in partnership on a wide range of issues including housing, economic development and infrastructure to the benefit of the whole area. Excellent progress has been made with capturing benefits from the offshore wind industry. SEGway in conjunction with related schemes in Ipswich (Upper Orwell Crossing) and Lowestoft (Lake Lothing Third Crossing) provides a further stimulus to connectivity, economic growth and regeneration beyond the area's immediate impact to Ipswich, Lowestoft and potentially Great Yarmouth.

Moving beyond the 'core aim' on to the core objectives outlined in **Table 5-1** - these were initially defined during the development of the Strategic Outline Business Case and have since been reviewed during the development of the Outline Business Case to capture identified problems and opportunities (as described in Chapter 4). This has resulted in the inclusion of two additional, highlighted objectives and the "quality of life for residents" component of the overall aim reinforced.

Overall aim	
Enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents	
Core objectives	
1.	Enhance the quality of life for local residents
2.	Reduce congestion and journey delay
3.	Improve journey time reliability providing support for the local economy and improved productivity
4.	Reduce community severance
5.	Provide the capacity required to enable, support and deliver growth across all economic sectors, including the construction and operation of Sizewell C nuclear power station.
6.	Reduce accidents
7.	To improve air quality and reduce noise impacts for communities alongside the A12
8.	Future proof the function of the A12 as part of Suffolk's emerging Major Road Network

Table 5-1: A12 Suffolk Energy Gateway core objectives

The successful delivery of the scheme will be judged by the following outcomes:

- Improved business productivity, investment and tourism in East Suffolk
- A more resilient economy through better connectivity to the region's ports, energy and food supplies
- Support for the delivery of new homes and jobs, including a further 25,000 job roles associated with a potential Sizewell C nuclear power station over the lifetime of its construction and then operation
- Improved journey times along the A12 route between Great Yarmouth, Lowestoft, Ipswich and the A14
- Reduced number and impact of accidents along the A12 route and its accompanying junctions.
- Increase in walking, cycling and horse riding to essential services and the countryside in the communities of Farnham, Stratford St Andrew, Little Glemham and Marlesford
- Improved air quality and reduced noise impacts in these Four Villages.

5.2 Historic scheme objectives

The scheme objectives have evolved since the original dual carriageway scheme progressed through to public inquiry by the Highways Agency in 1995 but the original objectives remain highly relevant.

Figure 5-1 illustrates how the objectives of the original project relate to the objectives of the current scheme.

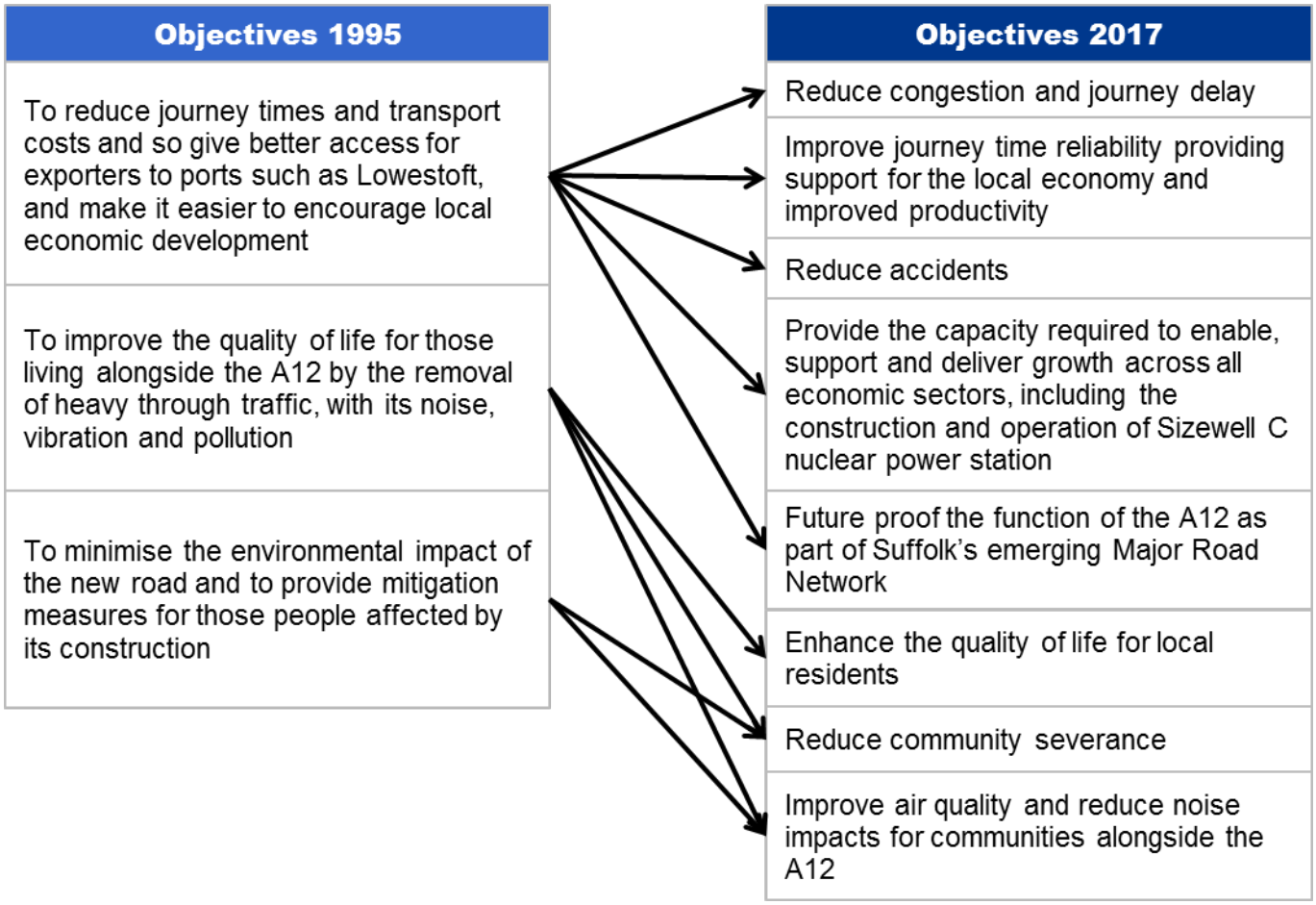


Figure 5-1: Comparison of objectives in 1995 and 2017

The overall aim of the scheme, to "Enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents" is aligned with all of the 1995 objectives.

The 1995 objective "*To reduce journey times and transport costs … and make it easier to encourage local economic development*" links directly to the objective of reducing congestion and journey delay. Furthermore, the new specific objective of reducing accidents will contribute to the reduction of congestion and journey delay by reducing the delays associated with accidents. Similarly, the reduction of congestion and delays of any type can be expected to contribute to improved journey time reliability.

The 1995 objective "*To improve the quality of life for those living alongside the A12…*" is directly related to the new objective "*To improve air quality and reduce noise impacts for communities alongside the A12*". Reducing community severance will also contribute to improved quality of life for local residents.

6. Proposals and option assessment

6.1 Option history

The need for intervention on the A12 has long been considered a priority. **Figure 6-1** illustrates the extensive work that has been carried out by Suffolk County Council and prior to that, the then Highways Agency, into option development and appraisal.

1987	Government first considered need for an improvement to the A12, with a bypass of Stratford St Andrew and Farnham proposed as part of the Roads Programme.
Late 1980s to early 1990s	Further scheme development and consultation undertaken by the Highways Agency. Northern bypass options ruled out for various reasons including deliverability issues and the longer route required.
1995	Long dual carriageway scheme progressed successfully through public inquiry by the Highways Agency. The Inquiry considered 15 alternatives to the HA's preferred scheme. These were all south of the A12 between Marlesford and Stratford St Andrew and included the 1987 proposal and a long single carriageway variant of the dual carriageway.
1996	Dual carriageway scheme funding lost due to government cuts.
June 2001	A12 road partially de-trunked north of the A14 Seven Hills interchange and control passed to Suffolk County Council.
2006	'A12 Four Villages Study' undertaken by AECOM and TLP on behalf of Suffolk County Council proposed three new road scheme options; including full dual and single carriageway options and a shorter partial route.
2013	'A12 Four Villages Study – Sizewell C Impacts' was a technical note undertaken by AECOM on behalf of Suffolk County Council to aid its response to EDF Energy's initial consultation on Sizewell C. This was a high level update of the 2006 study with respect to traffic, journey times, accidents and air quality and the business case for a bypass to relieve impacts associated with Sizewell C on the A12.
2014 / 2015	Further study undertaken by AECOM to assess incremental delivery of A12 improvements, which identified short option SB5 bypassing Stratford St Andrew and Farnham as the preferred short route, if a longer route not feasible. Emerging proposals for Sizewell C an important consideration in commissioning the study.
2016	Two long and two short route options to the south and east of the A12 considered as part of Strategic Outline Business Case developed by Mouchel. This confirmed the strategic rationale for the SEGway scheme and the economic case based on a proportionate assessment of transport costs and benefits in the absence of a detailed transport model. The Strategic Outline Business Case recommended two scheme options be taken forward for further development and assessment as part of an Outline Business Case – the long dual carriageway and long single carriageway options based on an assessment against the scheme objectives and transport user cost benefit terms.
2017	Analysis of the transport user costs and benefits of the four options appraised in the Strategic Outline Business Case with the new Suffolk County Transport Model. Development of Outline Business Case appraising the benefits and impacts of the long dual carriageway and long single carriageway options.

Figure 6-1: Scheme development history (1987-2017)

6.2 Option assessment including the Strategic Outline Business Case

Full details of the Option Assessment process from the 2006 studies onward are contained within the *Option Assessment Report*. These assessments have appraised scheme options across a mixture of cost benefit, performance against objectives and multi-criteria analysis, with the level of detail proportionate to the stage of the specific study.

The *Strategic Outline Business Case* appraised potential options - two long road options (single and dual carriageway options) and two short road options (single and dual carriageway options), building on the work undertaken in the 2006 and 2014/15 studies. The Strategic Outline Business Case appraised each of these both in terms of fit with policy and scheme objectives and WEBTAG value for money criteria. **Table 6-1** describes the shortlisted routes and **Figure 6-2** shows the route alignments.

Route	Length	Location
Option LB1d	6.8km dual carriageway	Route runs from the A12/B1078 Junction to the A12/A1094 Junction to the north of Farnham
Option LB2s	7.5km single carriageway	Route runs from the A12/B1078 Junction to the A12/A1094 Junction to the north of Farnham
Option SB5d	3.5km dual carriageway	Route runs from north of the A12/Button's Road Junction to the A12/A1094 Junction to the north of Farnham and Stratford St Andrew and includes an additional link improvement
Option SB5s	2.6km single carriageway	Route runs from north of the A12/Button's Road Junction to the A12/A1094 Junction to the north of Farnham and Stratford St Andrew

Table 6-1 : Shortlisted routes assessed as part of the Strategic Outline Business Case

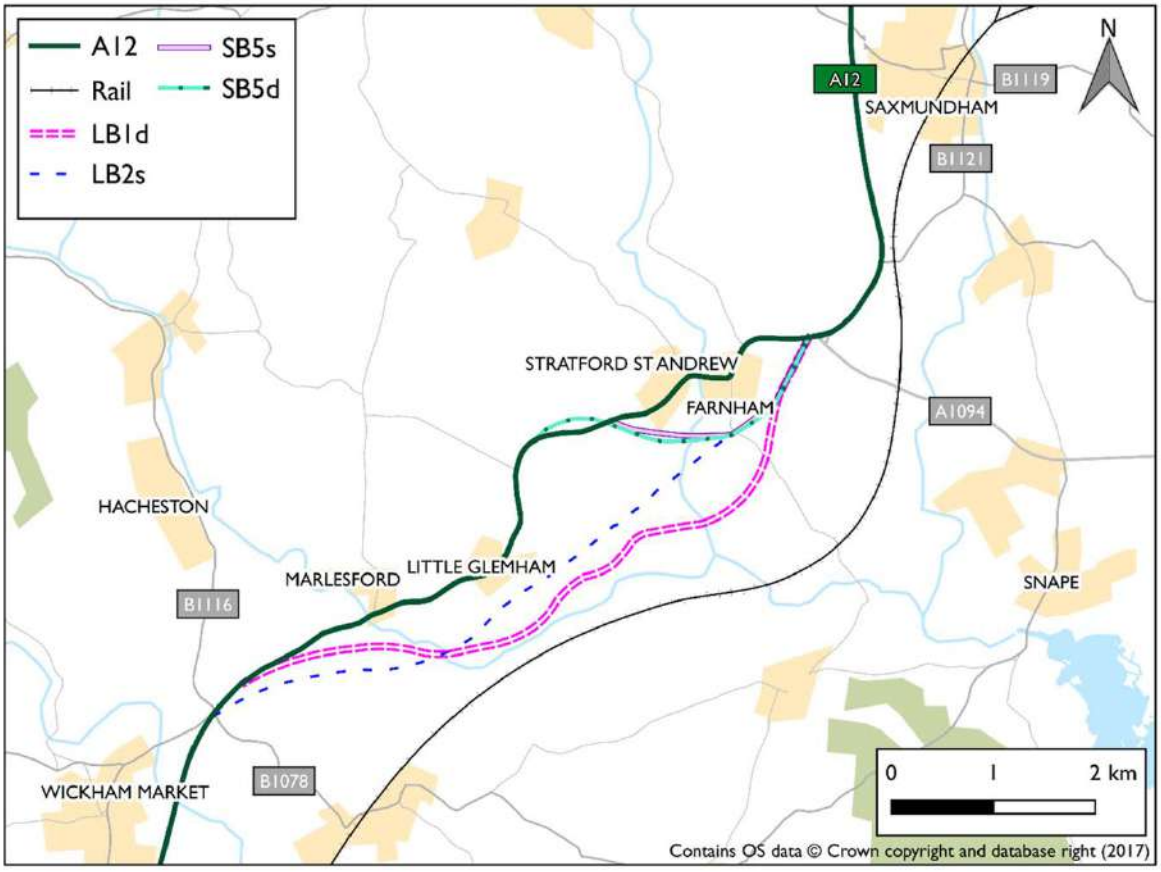


Figure 6-2 : Alignments of shortlisted options, Mouchel, 2016

6.2.1 Strategic Outline Business Case appraisal – Objectives and Value for Money

A comprehensive appraisal process was undertaken for the previous Strategic Outline Business Case following TAG guidelines and HM Treasury's public sector business case guidance. Each option was assessed against the scheme's objectives, using weighted RAG (Red/Amber/Green) style assessment, as shown in **Table 6-2** below.

Objective	Option LB1d	Option LB2s	Option SB5s	Option SB5d
To enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents	✓✓✓	✓✓	✓	✓
To reduce congestion and journey delay	✓✓✓	✓✓	✓	✓✓
To improve journey time reliability	✓✓✓	✓✓	✓	✓✓
To reduce community severance	✓✓✓	✓✓✓	✓✓	✓✓
To provide the capacity required to enable, support and deliver growth across a wide range of economic sectors, including the construction and operation of Sizewell C nuclear power station	✓✓✓	✓✓	✓	✓✓
To reduce accidents	✓✓✓	✓	✓	✓✓

Table 6-2: RAG assessment of shortlisted options against scheme objectives, Mouchel, 2016

Table 6-3 provides the key to the findings of the RAG assessment

Impact	Symbol	Description
Significant benefit	✓✓✓	Option could go a significant way towards accommodating the impacts of the new demand.
Moderate benefit	✓✓	Option is a moderate improvement at base levels of demand, but is not sufficient to mitigate the full impacts of all the traffic issues and demand.
Slight benefit	✓	Option is a slight improvement at base levels of demand, but is not sufficient to mitigate the full impacts of all the traffic issues and demand.

Table 6-3: RAG assessment key

Indicative costing and spreadsheet analysis was undertaken to determine the potential economic benefits of each option for the Strategic Outline Business case, summarised in **Table 6-4**. The Benefit Cost Ratio (BCR) is a useful measure of a scheme's value for money although consideration should also be given to other aspects in determining which schemes to progress.

	Option LB1d	Option LB2s	Option SB5s	Option SB5d
Present Value of Costs and Benefits (£000s – 2010 prices, discounted to 2010)				
Greenhouse gases	-1,171	334	-535	-1,310
Economic Efficiency: Consumer Users (Commuting)	**19,280**	**15,732**	2,808	7,288
Economic Efficiency: Consumer	**85,910**	**69,532**	12,975	33,069
Economic Efficiency: Business	**91,846**	**75,208**	13,970	34,985
Wider Public Finances (Indirect)	2,507	-784	1,179	2,854
Total present value of benefits (PVB) (£000s)	**198,372**	**160,022**	**30,397**	**76,886**
Total present value of costs (PVC) (£000s)	**93,435**	**43,346**	**19,046**	**31,990**
Benefit Cost Ratio Calculations				
Initial BCR = PVB/PVC	**2.1**	**3.7**	**1.6**	**2.4**
Adjusted BCR (incorporating wider impacts)	**2.2**	**3.9**	**1.7**	**2.5**

Table 6-4: Summary of initial economic assessment for the Strategic Outline Business Case, Mouchel, 2016

Based on initial BCRs alone the two strongest performing options were LB2s and SB5d, closely followed by LB1d. However, taking into account wider impacts and performance against the scheme objectives, Suffolk County Council identified the two full bypass schemes, LB1d and LB2s, as the strongest performing options

overall. LB2s also performed the role of the 'low cost option', being some £50 million cheaper than LB1d in terms of the present value of costs (2010 prices, discounted to 2010).

The two full bypass new road options were recommended for progression for further appraisal because they would best support the objectives for supporting economic growth, improve journey time reliability and importantly provide the best opportunity to remove the accident and community severance issues faced by local communities.

Further environmental and social analysis including the production of an appraisal summary table (AST) was then undertaken for these two best performing options. A summary scoring of each sub-impact is as follows.

Value for Money criteria	Option	
	Option LB1d	Option LB2s
b) Impact on the Environment		
Noise	**+3**	**+3**
Air Quality	+1	+1
Greenhouse Gases	-£1,171k	£334k
Landscape/Townscape	-1	-1
Historic Environment	-1	-1
Biodiversity	-1	-1
Water Environment	-2	-2
c) Impact on Society		
Physical activity	-	-
Journey quality	+2	+2
Accidents	**+£28,543**	+£7,527
Security	-	-
Access to services	-	-
Affordability	+1	+1
Severance	+1	+1
Option and non-use values	+1	+1

Table 6-5: Scoring of Environmental Impacts in the Strategic Outline Business Case, Mouchel, 2016

The qualitative assessment undertaken in the Strategic Outline Business Case was based on available desk-based data as opposed to baseline survey data. No quantitative analysis was undertaken at this stage of the appraisal process, other than through the assessment of greenhouse gases and accidents.

Conclusion

Suffolk County Council identified the two full bypass schemes, LB1d and LB2s, as the strongest performing options overall. This was based on their value for money (both having a BCR in excess of 2), the highest present value of benefits and their ability to best support the objectives for supporting economic growth, improve journey time reliability and importantly provide the best opportunity to remove the accident and community severance issues faced by local communities. LB2s also performed the role of the 'low cost option', being some £50 million cheaper than LB1d in terms of the present value of costs (2010 prices, discounted to 2010). While option SB5d did present a good benefit cost ratio, it resulted in a lower level of benefits and it did not adequately solve all the problems through the Four Villages. Therefore, this option was not recommended for further appraisal.

6.2.2 Further value for money appraisal

The Strategic Outline Business Case's value for money appraisal was undertaken using a spreadsheet based approach based on congestion reference flows and speed flow curves. With the Suffolk County Transport Model since developed, the DfT requested that Suffolk County Council review the value for money of the four options as part of the initial development of the Outline Business Case.

The opportunity was also taken to appraise previously considered options against the revised scheme objectives to check whether previously discounted options were now worth further consideration (the results of this can be found in Chapter 10 of the *Option Assessment Report.* This confirmed that Options LB1d and LB2s were still the two best performing options against the objectives.

Using the SCTM and best available costs at the time (these have since been updated) the modelling confirmed that the best option on purely transport economic efficiency cost benefit grounds was option LB2s, albeit that the greatest benefits were provided by option LB1d.

As the short bypass options offer a reduced net present value, no significantly higher BCR and poorer performance against the objectives, the original conclusion that the two long bypass options should be analysed further, remained valid.

6.3 Selection of the Preferred and Low Cost Alternative

6.3.1 Preferred Option

Following a consideration of the appraisal across each of the five constituent outline business case components, the preferred option for SEGway is option LB1d – dual carriageway. This option comprises an improvement to the 4.5 mile (7 km) section between the B1078 at Wickham Market and the A1094 at Saxmundham in East Suffolk comprising:

- A new 70mph dual carriageway segregated from local roads, joining two sections of existing dual carriageway.
- Bypasses of the Four Villages of Marlesford, Little Glemham, Stratford St. Andrew and Farnham currently subject to all the adverse impacts of traffic. It does this to the south and east of these communities
- Upgrades to sub-standard junction layouts at both the B1078 and A1094 intersections including:
    - an expanded roundabout at the junction of the B1078 and B1116 to cater for a realigned on-slip road to the northbound A12 and a new connection to the old A12 toward Marlesford
    - a new roundabout junction for the B1078, southbound A12 off-slip, southbound A12 on-slip and the unclassified Station Road to improve the current substandard staggered cross-roads to the east of the existing A12 overbridge
    - a replacement of the existing dual carriageway priority junction with central reserve at the A12 and A1094 with a new roundabout also incorporating a connection to the old A12 to Farnham
- Viaduct structures over the River Ore and Alde floodplains.
- Provision for existing roads and public rights of way to cross the A12 via overbridge or underbridge structures either in their current location or through short diversions to amalgamate crossing points.
- Appropriate environmental mitigation measures
- It would be subject to preliminary design and further consultation in 2018 with a view to submit a planning application for determination in early 2019
- Subject to satisfactory planning consent, funding and value for money, it would be built between April 2021 and April 2023 opening to the public in April 2023.

The reasoning is summed up the following key observation box, performance against the objectives at both a qualitative and quantitative level in **Table 6-6** and **Table 6-7** on the following pages.

Key Observation – Why is LB1d the Preferred Option?

- *Value for money (see Economic Case)*
- *Strategic fit with scheme objectives and Government policy*
- *Reduced travel costs for businesses, commuters and visitors through improved connectivity to other major centres and the Strategic Road Network*
- *Increased road safety benefits by providing safer opportunities for overtaking slow moving vehicles*
- *Its ability to provide a continuous high quality road as a gateway to East Suffolk's towns and villages, energy, tourist and other business assets from the south, making it an easier place to do business, visit, live and work*
- *Its ability to provide the headroom for East Suffolk's energy and tourism industries and settlements to grow at the pace they want, rather than be dictated by transport network constraints*
- *Improved reliability of travel for East Suffolk's businesses and hauliers to and from the county's ports at Felixstowe, Ipswich and Lowestoft and the Strategic Road Network (A12, A14, A47)*
- *Strength of support from the public, business, MPs, district, town and parish councils.*
- *Qualitative and quantitative performance against the scheme objectives (illustrated below).*

Objective	Option LB1d	Option LB2s
To enhance the quality of life for residents	✓✓✓	✓✓
To reduce congestion and journey delay	✓✓✓	✓✓
To improve journey time reliability	✓✓✓	✓✓
To reduce community severance	✓✓✓	✓✓✓
To provide the capacity required to enable, support and deliver growth across a wide range of economic sectors, including the construction and operation of Sizewell C nuclear power station	✓✓✓	✓✓
To reduce accidents	✓✓✓	✓
To improve air quality and reduce noise impacts for communities alongside the A12	✓✓	✓✓
Future proof the function of the A12 as part of Suffolk's emerging Major Road Network	✓✓✓	✓✓

Table 6-6 : Contribution to Scheme Objectives

Objective	Option LB1d	Option LB2s
1. Enhance the quality of life for local residents	This option has the strongest support of both options, with 72% of respondents who view a preference supportive of this option	This option has good support from residents with 51% of respondents who expressed a view supportive of this option
2. Reduce congestion and journey delay	This option provides the greatest benefit to road users, with a present value of benefits of £194 million (2010 prices, discounted to 2010)	This option provides good benefit to road users, with a present value of benefits of £128 million (2010 prices, discounted to 2010)
3. Improve journey time reliability providing support for the local economy and improved productivity	The Economic Case has demonstrated a Slight Beneficial impact in line with WEBTAG, which is not especially suited to rural 'A' roads, or those with seasonality impacts	The Economic Case has demonstrated a Slight Beneficial impact in line with WEBTAG, which is not especially suited to rural 'A' roads, or those with seasonality impacts
4. Reduce community severance	The Economic Case has demonstrated a Slight Beneficial impact in line with WEBTAG In relative terms this provides strong benefit to the majority of the residents of the Four Villages.	The Economic Case has demonstrated a Slight Beneficial impact in line with WEBTAG In relative terms this provides strong benefit to the majority of the residents of the Four Villages.
5. Provide the capacity required to enable, support and deliver growth across all economic sectors, including the construction and operation of Sizewell C nuclear power station.	GVA of £30 million to £115 million associated with Sizewell C Support from EDF Energy, Associated British Ports (its preference), New Anglia LEP, Suffolk Coastal District Council and Waveney District Council Aligns with Government's Industrial Strategy and Clean Growth Strategy	GVA of £30 million to £115 million associated with Sizewell C Support from EDF Energy, Associated British Ports, New Anglia LEP, Suffolk Coastal District Council and Waveney District Council Aligns with Government's Industrial Strategy and Clean Growth Strategy
6. Reduce accidents	681 casualties saved	285 casualties saved
7. To improve air quality and reduce noise impacts for communities alongside the A12	Local Air Quality PVB: £9.7 million Noise PVB: £3.8 million	Local Air Quality PVB: £3.6 million Noise PVB: £4.5 million
8. Future proof the function of the A12 as part of Suffolk's emerging Major Road Network	This option provides the greatest consistency in type of road for users – i.e. a dual carriageway. It allows similar enhancements to be made elsewhere at a later date to help maintain the A12 as a key corridor of movement for people and goods between key economic assets in Suffolk and further afield	This option provides an improvement in level of service for road users on the A12 although may constrains future potential along the corridor

Table 6-7 : Summary matrix of quantitative performance of both options against the scheme objectives, drawing on information from across the Business Case

It is proposed to retain option LB2s as a Low-Cost Alternative during the development of the Full Business Case. This is to provide sufficient flexibility in view of option LB1d's increased cost. This will require full and further consideration as the scheme design is developed in more detail for planning, further consultation and Full Business Case development.

7. Strategic fit

7.1 Introduction

A review of pertinent planning documents has been undertaken to identify how the SEGway scheme fits with national, sub-regional and local policy. A summary of the policy fit against each of the scheme's objectives is shown below and on the next page using a tick box matrix. Further commentary on each of the policies at a national, regional and local level is then provided in Sections 7.2, 7.3 and 7.4.

Policy	Scheme objectives							
	1	2	3	4	5	6	7	8
National Policy								
Industrial Strategy – Building a Britain Fit for the Future (Nov 2017)		✓			✓			✓
Congestion, Capacity, Carbon, October 2017		✓			✓		✓	✓
Clean Growth Strategy (October 2017)	✓	✓	✓		✓		✓	✓
Transport Investment Strategy (July 2017)	✓	✓	✓	✓	✓	✓	✓	✓
Housing White Paper – Fixing our Broken Housing Market (February 2017)			✓		✓			✓
DfT Business Plan 2015 to 2020 (October 2016)		✓	✓		✓	✓	✓	
The Carbon Plan: Delivering our low carbon future (December 2011)		✓			✓			
National Planning Policy Framework (March 2012)	✓	✓		✓	✓	✓	✓	
Investing in Britain's Future (June 2013)	✓	✓	✓		✓		✓	
Action for Roads, A Network for the 21st Century (July 2013)	✓	✓	✓		✓	✓	✓	✓
National Infrastructure Plan (December 2013)	✓	✓	✓		✓		✓	✓
Towards a one nation economy: A 10-point plan for boosting productivity in rural areas (Aug 2015)	✓				✓			
Tourism Policy (2011)		✓			✓			✓

Overall aim – To enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents

Objective 1 – Enhance the quality of life for local residents

Objective 2 – To reduce congestion and journey delay

Objective 3 – To improve journey time reliability

Objective 4 – To reduce community severance

Objective 5 – To provide the capacity required to enable, support and deliver growth across a wide range of economic sectors, including the construction and operation of Sizewell C nuclear power station.

Objective 6 – To reduce accidents

Objective 7 – To improve air quality and reduce noise impacts for communities alongside the A12

Objective 8 – To Future proof the function of the A12 as part of Suffolk's emerging Major Road Network.

Policy	Scheme Strategic Objectives							
	1	2	3	4	5	6	7	8
Sub-Regional Policy								
Economic Strategy for Norfolk and Suffolk (Autumn 2017)	✓				✓			✓
Local Policy								
Suffolk Local Transport Plan 2011-2031 (2010)	✓	✓	✓	✓	✓		✓	
Suffolk Rail Prospectus (2015)		✓	✓		✓			
Suffolk Coastal District Council Local Plan (2013)	✓	✓	✓	✓	✓	✓	✓	✓
The Approach to Future Development in Waveney to 2021 – Core Strategy (2009)		✓	✓		✓			✓
East Suffolk Growth Plan (August 2014)	✓	✓			✓		✓	✓
Issues and Options for the Suffolk Coastal Local Plan Review (2017)	✓	✓	✓		✓		✓	✓
First Draft Waveney Local Plan 2014-2036 (2017)		✓	✓		✓			✓
East Suffolk Tourism Strategy 2017 to 2022 (2017)				✓	✓			

Overall aim – To enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents

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Objective 8 – To future proof the function of the A12 as part of Suffolk's emerging Major Road Network.

As shown above, the scheme objectives have a strong synergy with national, sub-regional and local policy. Each objective aligns with at least one policy and in most cases, two or more. The objectives formed part of the appraisal process when appraising potential options.

7.2 National policy

The following national documents are currently pertinent and have been reviewed:

- Industrial Strategy – Building a Britain Fit for the Future, November 2017
- National Infrastructure Commission Report – Congestion, Capacity, Carbon: Priorities for national infrastructure, November 2017.
- Clean Growth Strategy, October 2017
- Transport Investment Strategy, July 2017
- Housing White Paper – Fixing our Broken Housing Market, February 2017
- DfT Single Departmental Plan 2015-2020, October 2016
- The Carbon Plan: Delivering our low carbon future, December 2011
- National Planning Policy Framework, March 2012
- Investing in Britain's Future, June 2013

- Action for Roads, A Network for the 21st Century, July 2013
- National Infrastructure Plan, December 2013
- Towards a one nation economy: A 10-point plan for boosting productivity in rural areas, August 2015
- Government Tourism Policy, Department for Culture Media and Sport, March 2011.

Table 7-1 below summarises the key national policies/objectives to which the SEGway would help contribute.

National Policy	Key extracts
Industrial Strategy – Building a Britain Fit for the Future (November 2017) Green Paper and Suffolk's combined response (April 2017) to the original Green Paper (January 2017)	The Industrial Strategy White Paper sets out Government's long-term plan to improve living standards and stimulate economic growth through targeted investment in the wake of the UK's vote to leave the European Union. Through science, research and innovation; skills; infrastructure; business growth; procurement; trade; affordable energy; policymaking and institutions, Government frames its nationwide industrial strategy. *The White Paper makes specific mention to five foundations which the Government believes drives productivity and earning power. Of specific relevance to Suffolk's Energy Coast and SEGway are the following:* 1. Ideas – "We need to do more to ensure our excellence in discovery translates into its application in industrial and commercial practices, and so into increased productivity." (p58) The paper states that an increase in public and private research and development (R&D) holds the key to transforming the UK into the most innovative country in the world, "revolutionis[ing] productivity in all sectors from construction and agriculture to manufacturing and the creative industries" (p66). The Economic Strategy (see below) also aims to deliver new jobs and increased productivity in sectors including manufacturing and engineering, agri-tech, energy, ICT and life sciences. Adastral Park, a science campus on the outskirts of Ipswich which aims to attract increased R&D therefore has an opportunity to benefit from improved connectivity as a result of the A12's re-alignment. 3. Infrastructure – "We must make sure our infrastructure choices not only provide the basics for the economy, they must actively support our long-term productivity, providing greater certainty and clear strategic direction. Our investment decisions need to be more geographically balanced and include more local voices." (p128) Recognising that increased connectivity brings a wider variety of jobs within people's reach, Government expects the current £600bn of National Infrastructure and Construction Pipeline funding to be doubled by 2022/23 (p129). 4. Business Environment – "Our Industrial Strategy aims to make Britain the best place to start and grow a business, and a global draw for innovators. We will drive productivity in businesses of all sizes by increasing collaboration, building skills and ensuring everyone has the opportunity of good work and high-paying jobs." (p164) 5. Places – "We will build on the strong foundations of our city, growth and devolution deals and continue to work in partnership with local leaders to drive productivity." (p216) Government will increase the National Productivity Investment Fund to £31bn to support investments in transport, housing and digital infrastructure. The White Paper also commits to working with new technologies and business models in order to tackle mobility-related issues, notably congestion and air pollution. The White Paper also makes reference to specific industrial sectors and sector deals. It notes that "The nuclear sector is integral to increasing productivity and driving growth across the country". "Industry-led proposals for a Nuclear Sector Deal focus on how, working with the government, substantial cost reductions can be achieved across the UK's new build and decommissioning programmes. There are shared interests in improving productivity and

National Policy	Key extracts
	the opportunities to improve the UK's competitiveness, domestic capability and export growth. The sector's proposals cover the supply chain, nuclear R&D and skills, where the aim of the deal is to help deliver the diverse workforce needed for the future, supporting a potential 100,000 jobs from Cumbria, north Wales, Somerset, Essex and Suffolk". (pp.206-207). *The contribution of the scheme in terms of facilitating investment at Sizewell C nuclear power station is one example where both a regional and a national level benefit could be expected.* Suffolk County Council provided an official response to the original Green Paper of January 2017 on behalf of public and private sector stakeholders, highlighting two critical elements that it wishes to work with Government on to help realise the strategy in this part of the country: **1. The Key Sectors of: Energy; ICT and digital; Agri-tech and Ports and Logistics, which are world leading sectors for the Suffolk economy:** • Growing, attracting and retaining the right skills to support business, improve productivity and ensure everyone can fulfil their potential • Maximising Suffolk's international connectivity and global reach • Developing sustainable places with the right infrastructure, access and environment that unlock growth and deliver the right homes in the right places **2. Securing the means to deliver Inclusive Growth:** • More local autonomy to take longer term, joined up planning and decisions rooted in an understanding of place that capitalise on the levers and assets available • Using innovative investment models and delivery mechanisms • Through better evidence and intelligence *Finally, also of relevance to SEGway is the following key message:* "Connectivity is critical in growing Suffolk's economy as well as enabling people to fulfil their potential and for communities to thrive. **Infrastructure investment** whether, roads, rail or digital, is fundamental to growing Suffolk's economy. Equally, a talented and skilled workforce is needed to realise the full growth potential of Suffolk's economy. Businesses need skilled, productive, and adaptive workers who can respond competitively to future opportunities. Both are demonstrated in [Suffolk's] focus on the: **energy, ICT, agri-tech and ports and logistics sectors**, along with **opportunities for scaling up**."
National Infrastructure Commission Report – Congestion, Capacity, Carbon: Priorities for National Infrastructure (November 2017)	The purpose of the National Infrastructure Commission (NIC) is to take a long-term perspective to 2050 across infrastructure sectors and make independent recommendations based on its world leading experience and expertise and best available evidence. It recognises the need for a transformational response to energy generation and transport by 2050 to meet the challenge of climate change. Continuing investment will be needed in transport capacity whether to alleviate bottlenecks or to enhance connectivity. It references the high percentage of electricity generating capacity reaching the end of its lifespan over the next 15 years, resulting in a need for an ambitious response. The NIC identified seven priority areas in which it believes current plans and policy frameworks fall well short of what will be required if the UK is to have the infrastructure it requires. *These included the following four of relevance to SEGway:* • Connected, liveable city-regions: linking homes and jobs.

National Policy	Key extracts
	• New homes and communities: supporting delivery of new homes. • Low-cost, low-carbon: ending emissions from power, heat and waste. • Financing infrastructure in efficient ways: getting the right balance between public and private sectors. *SEGway will contribute significantly to these four areas, enhancing connectivity across Suffolk, enabling delivery of the various energy and community projects associated with Suffolk's Energy Coastline.*
Clean Growth Strategy (October 2017)	This strategy sets out a comprehensive set of policies and proposals that aim to accelerate the pace of 'clean growth', i.e. deliver increased economic growth and decreased emissions. It sits alongside the Industrial Strategy and a forthcoming Environment Strategy. "Clean growth means growing our national income while cutting greenhouse gas emissions. Achieving clean growth, while ensuring an affordable energy supply for businesses and consumers, is at the heart of the UK's Industrial Strategy. It will increase the UK's productivity, create good jobs, boost earning power for people right across the country, and help protect the climate and environment upon which we and future generations depend. In 2016, 47% of UK electricity came from low carbon sources, around double the level in 2010. The UK now has the largest installed offshore wind capacity in the world. In order to meet the fourth and fifth carbon budgets (covering the periods 2023 to 2027 and 2028 to 2032) the UK will need to drive a significant acceleration in the pace of decarbonisation and in this strategy Government has set out stretching domestic policies that keep the country on track to meet our carbon budgets. Specific measures associated with Delivering Clean, Smart, Flexible Power which represent 21% of UK Emissions include: 34) Deliver new nuclear power through Hinkley Point C and progress discussions with developers to secure a competitive price for future projects in the pipeline. 35) Improve the route to market for renewable technologies such as offshore wind." *This shows the continued focus by the UK Government on new nuclear and offshore wind to make a growing and even more significant contribution to the UK's energy mix. SEGway would help facilitate the growth of both. Furthermore, the New Anglia LEP was appointed the Government's 'Green Economy Pathfinder' Local Enterprise Partnership in 2012 and has so far lead the way in combining economic growth and environmental sustainability. SEGway will further enhance the LEP's capabilities in this field.*
Transport Investment Strategy (July 2017)	"The Transport investment strategy sets out a new long-term approach for government infrastructure spending — meaning cash will be targeted at projects that help rebalance the economy. The strategy aims to help people get to work or school by better connecting towns and cities, unlock land for new homes, and improve business links — forming a crucial strand of the government's strategy to rebalance the economy by ensuring wealth is spread across the UK, and not just concentrated in the south-east of England. *Specific aims that the SEGway scheme can help contribute to include:* • Create a more reliable, less congested, and better connected transport network that works for the users who rely on it; • Taking away the misery of lorries and through-traffic thundering through rural villages on main roads • Build 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 - long term success in a globalised world depends on our ability

National Policy	Key extracts
	to attract job creating investment in our industrial strengths and to trade as frictionlessly as possible with partners. • Support the creation of new housing. As the Government's Housing White Paper recognises below, transport infrastructure is one of the keys to unlocking development and delivering places people want to live. • The function of the proposed new major road network (MRN) - the most important 'A' roads under local authority's management.
Housing White Paper – Fixing our Broken Housing Market (February 2017)	The housing market in the UK is not delivering the homes that people need. The ratio of average house prices to average earnings has more than doubled since 1998, making it harder for millions of people to afford their own home. At the root of this lies a failure to build enough homes. Since the 1970s, there have been on average 160,000 new homes built each year in England. This is well below the estimated 225,000 to 275,000 homes per year needed to keep up with population growth and tackle years of under-supply. The Government's Housing White Paper sets out a range of proposals to boost housing supply and create a more efficient housing market (p. 14). It recognises the need to: • "Plan for the right homes in the right places. This is critical to the success of our modern industrial strategy. Growing businesses need a skilled workforce living nearby, and employees should be able to move easily to where jobs are without being forced into long commutes." • "Build homes faster. We will invest in making the planning system more open and accessible, and tackle unnecessary delays. Development is about far more than just building homes. Without the right infrastructure, no new community will thrive – and no existing community will welcome new housing if it places further strain on already stretched local resources." Transport investment can play a key role in helping unlock a housing development. As residential areas expand and new areas develop, we need to ensure there is enough capacity to accommodate demand, that existing residents are well catered for, and that new residents are easily connected to centres of employment and services. *District Councils in the study area are currently consulting on the potential for ambitious levels of housing growth in tandem with a focus on economic sectors (such as energy) identified by the LEP as opportunities for growth and enhanced productivity. Funding commitment to SEGway provides the District Councils with greater flexibility in the way that it plans for growth in the future SEGway in this context is well placed to support Government aims.*
DfT Single Departmental Plan 2015 to 2020 (October 2016)	The Government's vision is to invest in order to make journeys "simpler, faster and more reliable". This will support jobs, business growth and bringing the country closer together. The level of investment in transport is to increase by 50% by 2020 to boost productivity, market competitiveness, employment opportunities and innovation. Government will also take action to "tackle some of the most notorious and longstanding problems on our road network". The Plan also recognises that "transport has a big role to play in meeting the government's objectives on the environment and public health", and there is a need to "reduce the localised pollution that causes air quality problems". *SEGway closely aligns with these aims, which mirror local issues and opportunities associated with business productivity and growth, congestion and air quality referenced in Section 4.1.*
The Carbon Plan: Delivering our low carbon future	The plan sets the path for the UK to achieve decarbonisation within the framework of energy policy to make the transition to a low carbon economy while maintaining energy security, and minimising costs to consumers and the Climate Change Act 2008. The Plan makes reference to the good progress made so far, with East Anglia a vital

National Policy	Key extracts
(December 2011)	contributor to the success, through Sizewell B and extensive offshore wind arrays: "In the last decade wind and other renewables have grown to the point that they now provide nearly a tenth of UK generating capacity. With nuclear power generating 16% of total UK electricity, a quarter of electricity generation is now low carbon." However, to cut emissions by 80% to 2050 there will still need to be major changes to change the source of emissions and cope with rising electricity demand. *SEGway makes its biggest contribution to the Carbon Plan through the role it provides in enhancing access to and facilitating investment in low carbon electricity installations and the companies that support and supply them both now and in the future, namely the East of England Energy Zone referenced in Section 2.5.5.*
National Planning Policy Framework (March 2012)	The planning system's purpose is to support the delivery of sustainable development at the economic, social and environmental levels. Sustainable economic development should be supported by the delivery of homes, business units, infrastructure and successful local places. *SEGway supports the following elements of the NPPF in particular. It is also important to note that Suffolk County Council have developed the scheme and its need in collaboration with Suffolk Coastal District Council and major investors such as EDF to understand the issues and opportunities associated with existing infrastructure and its barriers to growth:* • Supporting strong, healthy and vibrant communities, by providing the supply of housing required to meet the needs of present and future generations; and by creating a high quality built environment, with accessible local services that reflect the community's needs and support its health, social and cultural well-being (p2) • In promoting sustainable transport, "encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion" (p9). • "Local authorities should work with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure necessary to support sustainable development, including…transport investment necessary to support…major generators of travel demand" (p9). • "Supporting the delivery of renewable and low carbon energy and associated infrastructure" (p21). • "Planning policies should sustain compliance with and contribute towards…national objectives for pollutants, taking into account the presence of Air Quality Management Areas" (p29). • Local planning authorities should "work closely with the business community to understand their changing needs and identify and address barriers to investment, including lack of housing, infrastructure or viability" (p39). • "Planning policies should be based on up-to-date information on the location of major hazards and on the mitigation of the consequences of major accidents" (p41).
Investing in Britain's Future (June 2013)	This paper recognises the key role of infrastructure in rebalancing the economy, enhancing productivity and creating jobs, with the announcement of £50bn of investment over the next generation. The Government aims to deliver transport infrastructure fit for a globally competitive economy, and this includes upgrading road networks to rival rapidly developing countries. *SEGway supports the following points in particular:* The government has pledged solutions for roads known to harbour congestion issues that have been overlooked previously (p18). Government hopes to attract up to £110bn of private sector energy investment, part of

National Policy	Key extracts
	which will help to realise the UK's transition towards nuclear energy. Government states its commitment to "ensuring that any improvements to the network [are] done in a way that supports the nation's overall quality of life and environment", such that a well-functioning road network does not come at the expense of a well-protected environment (p18).
Action for Roads, A Network for the 21st Century (July 2013)	The document was developed in conjunction with *Investing in Britain's Future* with a recognition of the vital role that transport and roads in particular plays in the success of our economy and way of life. Reliable journeys are in particular especially important for the efficient delivery of goods (p13). Local roads are recognised in the paper as being "vital to promoting growth locally and nationally", also impacting millions of lives on a daily basis (p8). The paper recognises that Councils are best placed to know when there is a need for investment in improving their transport network, including to "tackle congestion or build better links to the outside world" but that they might face difficulties in releasing funds due the strings attached to them. Poor air quality issues that have "negative impacts on communities living near roads" is also a problem that needs to be tackled (p26). While there have been major gains in environment and safety in recent years, greater investment could mean big improvements in some locations The paper recognises that "motorists almost always start and end their journeys on local roads, therefore decisions about strategic roads must take account of the impacts on local transport infrastructure. Equally, well-maintained and improved local roads are needed for a successful strategic road network." (p69). *SEGway supports the smoother movement of commuting, business and leisure traffic helping to connect users with the SRN and International Gateways at Ipswich, Felixstowe and Lowestoft. It also supports the resolution of a local air quality management area alongside the current A12.*
National Infrastructure Delivery Plan 2016-2021 (March 2016)	Government has pledged to invest over £100bn on economic infrastructure by 2020-21. This is aimed at supporting growth and creating jobs in the short-term as projects are built, as well as support job creation and international competitiveness in the long-run as labour and product markets are better integrated. Local roads specifically will be provided with £5bn in the same time period. A reliable and high-performing road network helps improve productivity, but over decades, the quality of the network has declined and congestion, noise and poor air quality have become problems at certain hotspots *Government is also moving towards decarbonisation in energy policy to meet its Climate Change Act obligations, as exemplified by the exploration of new nuclear power stations and offshore wind. SEGway supports both of these goals.*
Towards a one nation economy: A 10-point plan for boosting productivity in rural areas (August 2015)	Government identifies transport investment as a means of stimulating rural economic growth, and is investing £5.9 billion in the maintenance of the local road network. "Tourism is an increasingly important component of rural economies", but isn't exploited to the fullest of their potential due to a fragmented tourism landscape and a lack of funding (p16). *As well as improving links between larger settlements and major economic assets, SEGway will also support the diverse and naturally dispersed rural and tourism economies of East Suffolk that can only be realistically served in most cases by the private car.*
Government Tourism Policy, Department for Culture Media and	Government identifies "a better way to travel: improving our transport infrastructure" as a key tourism policy strand (p41) including prioritising improvements and repairs to road and rail networks that both benefit local and visitor needs.

National Policy	Key extracts
Sport (2011)	"Tourism is an often underestimated but tremendously important sector of the UK's economy. It's already one of our six biggest industries and our third-largest export earner. It accounts for almost £90bn direct spend each year, contains over 200,000 businesses and provides 4.4% of our nation's jobs. Equally importantly, it creates wealth and employment in all parts of the country, not just the south-east" (p7). "We must make it easier and more convenient for visitors to reach other parts of the country… We must also ensure that once in areas outside London, tourists are able to get to destinations of interest, be they sporting venues, our beautiful countryside or our coast." (p33). *As noted in Section 2.5.6, tourism is a vital component of East Suffolk's economy, manifesting itself in a marked seasonality profile with its own issues and challenges (section 2.7.3). SEGway will improve connectivity and journey quality for visitors to Suffolk's wide range of tourist assets.*

Table 7-1: Key national policies and objectives

7.3 Sub-regional policy

The aim of the **New Anglia Local Enterprise Partnership** (LEP) is to spearhead economic growth in the East of England (Norfolk and Suffolk). In November 2017 the LEP, in conjunction with local authorities and businesses, released the new **Economic Strategy for Norfolk and Suffolk**, focussing on priorities for growth through to 2036. The objective of the new strategy is to construct 140,000 homes across the two counties by 2036, and target an increase of 30,000 new businesses and 88,000 net new jobs. Prioritising skills and productivity is also at the forefront of the strategy, which aims for 66% of the population to be educated to NVQ3+ or above and a GVA per hour of £39 by 2036.

The LEP's **ambitions** for Norfolk and Suffolk are:

- The place where high growth businesses with aspirations choose to be
- An international facing economy with high value exports
- A high performing productive economy
- An inclusive economy with a highly skilled workforce
- A centre for the UK's clean energy
- A place with clear ambitious offer to the world

The LEP's **priority themes** can be explained as the economy-wide opportunities where evidence shows that investment and action will have the greatest impact on the economy. These are as follows:

- Offer to the world – whilst this is multi-dimensional, the LEP reinforces the importance of working with government and private sector to ensure that the contribution of the region's energy sector is well understood and marketed, and then integrated with the utility, transport and green infrastructure to build the communities and places that people want to live in and visit all year round.
- Drive business growth and productivity including prioritising the digital and physical infrastructure to support business to develop and provide space for new and current firms to grow.
- Drive inclusion and skills
- Collaborating to grow – including working with other regions on topics such as transport, new nuclear and biotechnology where synergies exist
- Competitive clusters close to global centres – building on the presence and substantial further growth potential and high value of clusters such as the clean energy sector, globally significant ICT and research centre at Adastral Park near Ipswich.

The LEP and local partners have identified the Norfolk and Suffolk Energy Coast including Bacton, Great Yarmouth, Lowestoft and Sizewell with its assets on and offshore as one of its **'priority places'** for continued growth in the Economic Strategy for Norfolk and Suffolk.[30] This emphasises the importance of undertaking vital improvements to the A12 to support future growth in the energy sector which is considered critical for economic growth across the wider region, as well as within Ipswich and its surroundings.

The Economic Strategy reinforces the focus on the core growth areas that had first been mentioned by the LEP in its 2014 Strategic Economic Plan, however there is now an enhanced focus on the importance of sectors such as ICT, Tech & Digital Creative, in particular relating to the vision for Adastral Park as a growing ICT cluster and innovation hub and centre for SMEs and start-ups. The Economic Strategy highlights the importance of supporting development of the area through enhancing physical connectivity to the site from other areas, of which SEGway is a critical part.

The importance of tourism to the regional economy is also stressed, with the LEP noting the varied and rich tourist offering, from the coastline and countryside to postcard market towns, as well as cultural offerings including internationally noted festivals and brands. The LEP intends to develop a year round visitor offering by investing in strategic tourist projects that will increase levels of visitor spending.

SEGway would contribute to realising benefits in the following growth sectors identified in the Economic Strategy:

- **Energy** – This sector adds £1 billion GVA to Norfolk's and Suffolk's economy each year[31]. Major features of the sector include EDF Energy's Sizewell B nuclear power station, their planned investment in Sizewell C nuclear power station and the 25,000 job roles associated with this, alongside the East Anglia Array, Greater Gabbard and Galloper off-shore wind turbine fields serviced from the Port of Lowestoft, its Centre for Offshore Renewable Engineering, and clusters of manufacturing firms centred within Lowestoft's successful Enterprise Zone. This recent and future investment in the nuclear and renewable energy industry is vital to the achievement of the UK Government's Clean Growth Strategy (October 2017).
- **Information and Communications Technology (ICT), Tech and Digital Creative** - Adastral Business Park at Martlesham Heath, home to BT's Global Research and Development Headquarters, and Innovation Martlesham – an established (and growing) cluster of around 100 high-tech ICT firms.
- **Advanced Agriculture, Food and Drink** - The region supplies significant amount of food and drink to the country's supermarkets and the region's artisan products are a draw for visitors. Major firms include Adnams, Birds Eye alongside smaller firms such as Stokes Sauces and a wide range of restaurants, shops and markets all promoted by the East Suffolk Food and Drink Trails, a collaborative initiative by Defra, Suffolk Coastal District Council and Waveney District Council. Furthermore, the Centre for Environment, Fisheries and Aquaculture (Cefas) cuts across multiple sectors from its basis as a world leader in innovation and research in marine science. This has been strengthened with a recent £16 million Government investment in new and refurbished facilities at its Lowestoft Headquarters, with these due to open in 2019.
- **Visitor Economy, Tourism, Heritage and Culture** - In 2013 there were over 10 million visits made to East Suffolk with a total direct visitor spend of £462 million[32]. The total value of tourism to East Suffolk's economy and well-being is important, contributing £590 million and over 12,500 jobs. Suffolk's Energy Coast is supported by a strong cultural offer through festivals such as Aldeburgh and Latitude, alongside popular resorts such as Southwold, and things to do and visit such as nature reserves including The Broads National Park, historic buildings and castles, wildlife parks, restaurants and artisan shops all accessed by the A12.
- **Transport, Freight and Logistics** - worth £1.3 billion to New Anglia and employ over 23,500 people. Ipswich is the country's largest port for grain export; Great Yarmouth and Lowestoft serve the North Sea energy sector; and Felixstowe is the country's busiest container port, responsible for over 40% of UK container traffic with further investment and expansion underway.

[30] New Anglia LEP et al., Norfolk and Suffolk Economic Strategy – A Strategy for Growth and Opportunity Executive Summary, p.7., November 2017
[31] New Anglia LEP et al., Economic Evidence Report (Updated), p. 126, December 2017 - https://newanglia.co.uk/wp-content/uploads/2017/12/2017-12-05-FINAL-Economic-Evidence-Report-single-pages-HighRes.pdf, accessed 8 December 2017
[32] Economic Impact of Tourism Reports for Suffolk Coastal and Waveney, 2015, referenced in the East Suffolk Tourism Strategy 2017 to 2022

7.4 Local policy

The following local documents are currently pertinent and have been reviewed below.

- Suffolk Local Transport Plan 2011-2031, Suffolk County Council, 2010
- Suffolk Rail Prospectus, Suffolk County Council, 2015
- Suffolk Coastal District Local Plan (Adopted), Suffolk Coastal District Council, 2013
- The Approach to Future Development in Waveney to 2021 – Core Strategy (Adopted), Waveney District Council, 2009
- East Suffolk Growth Plan, Suffolk Coastal District Council and Waveney District Council, 2014
- Issues and Options for the Suffolk Coastal District Local Plan Review, Suffolk Coastal District Council, August 2017
- First Draft Waveney Local Plan 2014-2036, Waveney District Council, 2017
- East Suffolk Tourism Strategy, 2017 to 2022, East Suffolk Councils, 2017.

Table 7-2 below summarises the key local policies/objectives to which the SEGway would help contribute.

Local Policy	Key extracts
The Suffolk Local Transport Plan (LTP) 2011-2031 (2010)	The LTP outlines the importance of mitigating congestion and reliability issues in sustaining economic growth. Poor access to employment opportunities among the 16-24 age bracket is an issue of high concern in the Suffolk Coastal district, and better transport will alleviate this, as well as provide greater choice for young people over career-defining decisions such as what to study and where, thus helping to foster a more skilled and innovative workforce. The A12 has been identified as a 'hotspot' for high traffic noise levels, and the section passing through the villages of Marlesford, Little Glemham, Stratford St Andrew and Farnham has been highlighted for its "long standing issues of traffic volume", which in turn contributes to community severance, congestion and reduced journey time reliability. These issues would be addressed with the provision of a relief road that widens the route and eliminates its curvaceous form. This will be of particular significance during the construction phase of Sizewell C with regards to difficulties borne by HGV drivers along this narrow, winding section of the road. *This demonstrates that Suffolk County Council has long considered the need for an intervention on this section of the A12 to tackle a wide range of current and future issues. The SEGway scheme as planned satisfies these requirements.*
The Suffolk Rail Prospectus (2015)	High-quality rail services are vital to investment and job creation. In addition, Ipswich and Lowestoft are both experiencing rapid population growth, which, along with comparable levels of growth in smaller settlements elsewhere on the East Suffolk Coast, have driven increased passenger demand on the East Suffolk Line. As such, more frequent and reliable journeys between Ipswich and Lowestoft on the East Suffolk Line are proposed in the paper. *The A12's potential to improve journey time and reliability is complementary to Suffolk County Council's ambitions to upgrade the local rail infrastructure. Improving both is vital to providing users with improved connectivity, resilience and choice to strengthen links between the main economic centres in East Suffolk.*
Suffolk Coastal District Council Local Plan (2013)	The Core Strategy and Development Management Policies set out the vision and strategy for development in the district to 2027. This document forms part of the formal Development Plan for the district and is used in the determination of planning applications.

Local Policy	Key extracts
	The Local Plan provides a baseline summary of transport issues including the need to: • tackle poor access to jobs, both in terms of the quality of the transport system but also the number and location of the jobs themselves; • address concerns regarding the impact of lorry traffic on rural roads by new employment activity but also by agricultural-related works. • work with partners to secure the dualling of the A12 single carriageway sections north of Woodbridge and north of Wickham Market, to better meet the needs of daily and visitor traffic and improve quality of life for residents along the route; Strategic Policy 10 A12 & A14 identifies the A12's importance to the local economy as a tourist route and Low Carbon Energy corridor between Sizewell and Lowestoft. "Subject to conformity with other elements of the strategy, particularly in respect of the environment, the Council supports the provision of improvements to the A12 (north of Woodbridge) including as a first priority, provision of a by-pass or other solution for Little Glemham, Marlesford, Farnham and Stratford St Andrew the "Four Villages" where the road is particularly narrow and twisting with buildings located very close to it." Strategic Policy 13 Nuclear Energy references the possibility of additional nuclear power stations at Sizewell, noting that local issues to be considered as a minimum include: "Transport issues such as the routing of vehicles during construction, improvements to the road system (including the A12), and use of rail and sea for access all having regard to such factors as residential amenity". *The need for SEGway both now and in the future has strong support through Suffolk Coastal District Council's adopted Local Plan.*
The Approach to Future Development in Waveney to 2021 – Core Strategy (2009)	The Waveney Core Strategy was adopted by the District Council in 2009. This document forms part of the formal Development Plan for the district and is used in the determination of planning applications. Policy CS15 Sustainable Transport references support for "measures to make local improvements on the A12 Lowestoft to Ipswich will be pursued through lobbying to assist in securing economic benefits to Waveney." In particular journey reliability will be improved by focusing on improvements to the section of the A12 passing the Four Villages (p47). Employment in tourism is low given the importance of tourism to Waveney's economy, and there are plans to make Waveney a year-round tourism destination, making sustainable use of The Broads, coast and countryside and providing high-quality tourism accommodation and cultural facilities (p13). The Local Transport Plan, meanwhile, aims to minimise the traffic and transport infrastructure impacts of visits to "tourism honey pots" (p7). *Although SEGway road bypass scheme is not located in Waveney District, its local plan recognises the contribution that such a scheme would make to improving reliability of journeys between key economic centres and tourist attractions in East Suffolk and facilitating the regeneration of Lowestoft town.*
East Suffolk Growth Plan (2014)	The East Suffolk Growth Group (ESGG) was established in 2013 to provide direction to the task of growing the East Suffolk economy, in response to the local and countywide aspiration to achieve economic growth. This Growth Plan was produced to develop a plan for sustainable economic and housing growth whilst maintaining and enhancing the high quality built and natural environment, helping to inform the subsequent Strategic Economic Plan and Economic Strategy for Norfolk and Suffolk referenced in the regional policy section above

Local Policy	Key extracts
	and the local plan reviews referenced below. The plan sets out its growth ambitions through the development and enhancement of key sectors and strategic growth locations. There are nine tier 1 and tier 2 growth locations, with the tier 1 locations expected to grow by around 2,000 jobs by 2025 and 'a steady pipeline of development sites coming forwards. Tier 1 sites are Greater Ipswich including Martlesham, Felixstowe and the A14 corridor, Lowestoft and Sizewell, while Tier 2 sites are Woodbridge, Saxmundham, Halesworth and Beccles. However, the East Suffolk Growth Plan identifies shortcomings in transport investment as a barrier to achieving this growth in East Suffolk. Furthermore, it recognises that in the event of Sizewell C's construction, increased volumes of traffic on the section of the A12 between Ipswich and Lowestoft will "make the situation untenable" for commuters. In addition, 70-80% of new employment and housing development in Waveney is predicted to be in Lowestoft, further demonstrating the need for a more reliable major road link to Ipswich. However, the de-trunking of the A12 between Ipswich and Lowestoft in 2001 has led to severe underinvestment. *This shows that there has been a strong and consistent interest in growing the East Suffolk economy, with the narrative influencing the SEP and local plans. This plan and those documents are consistently aligned with the need to improve the A12 between Marlesford and Farnham.*
Issues and Options for the Suffolk Coastal District Local Plan Review (August, 2017)	The 2017 Suffolk Coastal Local Plan review identifies several key social, economic and environmental issues across the district which could be impacted by improvements to the A12. Issues identified include young people leaving the district, notably linked to the difficulty of the local population to access new employment opportunities; the two Air Quality Management Areas (AQMAs) in the district including in Stratford St Andrew; and the need to improve the road and rail network to encourage economic growth. The Local Plan notes that compared to other regional road corridors, the levels of movement and demand on the A12 corridor are currently lower and as a result there is reduced synergy between Colchester, Ipswich and Waveney in commercial property market terms. However, the Local Plan review recognises that the County Council is currently developing the case for the four-village bypass scheme, which will underpin future economic growth and synergy along the corridor, including in the growth area of Saxmundham. The Local Plan review (see section 3.3.2 for further details) has also identified the potential for a shift in policy regarding housing growth within the district. The plan identifies three alternative options for the proposed locations of new housing across the district. In all cases some growth is planned for the A12 corridor although this could range from 200 to over 1,500 homes in communities such as Saxmundham and Leiston depending on the option and growth scenario, demonstrating the case for investment in the A12 to mitigate the impacts and realise the opportunities presented by growth. *Emerging plans for growth associated with Suffolk Coastal District strengthen the case for investment in the A12, including SEGway. Greater certainty on the scale and location of growth will be clearer in 2018 following the conclusion and reporting on the 2017 public consultation into the Issues and Options.*
First Draft Waveney Local Plan 2014-2036, (2017)	The First Draft Local Plan was consulted upon between July and September 2017, with Waveney District Council currently considering the responses received with a view to update its draft, take it through Examination in Public and adopt it in 2018. This followed on from the Issues and Option phase that progressed between 2015 and 2016.

Local Policy	Key extracts
	Whilst the majority of the 5,000 new jobs in Waveney district will be accounted for by growth in the offshore wind sector, there will also be growth in the tourism, retail and construction sectors. Plans to upscale tourism, and provide new employment (including extension to South Lowestoft Industrial Estate within the Enterprise Zone) and residential allocations in Kirkley and Lowestoft would be better served by a less congested and more reliable A12 route from Sizewell and Ipswich, in addition to other key schemes in the area such as the Lake Lothing Third Crossing. The Local Plan references that the Enterprise Zone is in the right location (south side of Lowestoft) to serve Sizewell related trade. *The First Draft Local Plan references plans to upgrade the A12 between Marlesford and Farnham in order to increase accessibility to the district from Ipswich, and to support the potential development of Sizewell C. Policy WLP1.4 states that Waveney District Council will work with local partners to ensure that the growth outlined in this Local Plan is supported by necessary infrastructure including improvements to the A12 between Lowestoft and Ipswich.*
East Suffolk Tourism Strategy, 2017 to 2022 (2017)	The Strategy recognises that tourism is a key sector for economic growth, employment and well-being in East Suffolk. The strategy seeks to build on key strengths (diverse range of experiences to satisfy all tastes) and deal with weaknesses (low pay and productivity, inconsistency in experiences and strong competition from other areas capturing high value and high spending customers, year round). Key aims are to increase the volume and value of tourism, to extend the tourist season, to create compelling destinations and to link visitors to more experiences. A key part of this is to ensure that the foundations underpinning the visitor economy are in place for the long term; this includes the transport network and aesthetics of the area. Other aims that SEGway could help contribute to include encouragement of active tourism, such as walking and cycling. Section 2.6.4 showed that key signed cycle routes are separated by the A12, with no conflict free route to join them up, resulting in low usage of cycle routes in the area.

Table 7.2 : Strategic fit of SEGway with key local policies/objectives

7.5 Summary

Key Observation

The scheme is closely aligned with the outcomes sought by pertinent national, regional and local policy documents. Specific emphasis should be given to the following:

National policy

- *The SEGway scheme supports the aims of the Industrial Strategy White Paper, Clean Growth Strategy, NIC's Congestion, Capacity and Carbon report, and National Infrastructure Delivery Plan, particularly in enhancing access to and facilitating investment in low carbon electricity installations, including new nuclear power and offshore wind, enabling them to make a growing and even more significant contribution to the UK's energy mix. It will also facilitate the growth of both sectors and the companies that support and supply them both now and in the future, namely the East of England Energy Zone referenced in Section 2.5.6.*
- *The SEGway scheme will also support the aims of the National Policy Planning Framework and the Transport Investment Strategy, in creating a more reliable, less congested, and better connected transport network; reducing the volume of HGVs and other through-traffic through rural villages on main roads; enhancing productivity and responding to local growth priorities; and supporting the creation of new housing.*

Regional policy

- *The Economic Strategy for Norfolk and Suffolk aims to spearhead economic growth in the East of England, focussing on high-impact growth sectors, including clean energy, ICT, advanced agriculture, food and drink, tourism, heritage and culture, and transport, freight and logistics. It includes the Norfolk and Suffolk Energy Coast as a priority place for investment, emphasising the importance of undertaking vital improvements to the A12. The SEGway scheme would contribute to realising benefits in these priority areas.*

Local policy

- *The Suffolk Local Transport Plan acknowledges that an intervention is long overdue on this section of the A12 and would tackle a wide range of current and future issues.*
- *The recent first draft 2017 Waveney Local Plan references plans to upgrade the A12 between Marlesford and Farnham in order to increase accessibility to the district from Ipswich, and to support the potential development of Sizewell C. Similarly, Suffolk Coastal district's Local Plan Issues and Options, strengthen the case for investment in the A12, including SEGway.*
- *The East Suffolk Tourism Strategy and the Economic Strategy for Norfolk and Suffolk aim to increase the volume and value of tourism, to extend the tourist season, to create compelling destinations and to link visitors to more experiences. The SEGway scheme would facilitate this through improving underlying transport links which are the foundation of the visitor economy. SEGway could also help encourage active tourism, such as walking and cycling by reducing severance of key routes.*

8. Impact of the Scheme on National Strategic Priorities

8.1 Introduction

This chapter provides an overview of how the scheme aligns with relevant national strategic priorities identified in the DfT's Checklist for Bidders, namely:

- Ease Congestion and provide upgrades on important national, regional and local routes
- Unlock economic and job creation opportunities
- Enable the delivery of new housing developments
- Impact on the Strategic Road Network
- Access to International Gateways.

8.2 Ease Congestion and provide upgrades on important national, regional and local routes

The scheme directly supports this national transport objective, by removing an existing pinch-point on the A12, the key road corridor for movement in East Suffolk, connecting the two largest towns of Ipswich and Lowestoft and the communities in between with each other and the SRN. The A12 is a core component of Suffolk's emerging Major Road Network and the southern end of the main transport corridor in one of New Anglia's priority places for investment – the Norfolk and Suffolk Energy Coast.

8.3 Unlock economic and job creation opportunities

8.3.1 Methodology

In line with WebTAG, the monetised impacts included in calculation of the core scheme BCR do not include the effect of the GVA growth unlocked by the scheme. GVA measures the total value of goods and services; i.e. economic activity. In its simplest terms, it is therefore Gross Domestic Product (GDP) at a local/regional level. In line with the DfT's 2017 Value for Money Framework[33] should be considered by the decision maker through the concept of "switching values" to understand the sensitivity of the scheme's value for money if a cost or benefit could be assigned to a factor such as this.

Transport acts as an enabler of growth by providing enhanced transport links and transport capacity that allows in this context:

- additional jobs to be accommodated in a certain location
- additional people to visit an area and spend their money on services supplied by the visitor economy

This applies especially to areas suffering from either congestion or insufficient transport links. These jobs or an increase in revenue are therefore not created by the transport scheme itself, but are supported by the increase in accessibility facilitated by the scheme. The jobs and/or spending is therefore (to varying proportions) dependent on the transport scheme – i.e. complementary. This GVA assessment aims to quantify the increase in GVA for the local economy as a result of these additional jobs or visitors.

GVA benefits have been calculated in terms of SEGway:

- Mitigating some of the transport impacts of Sizewell C's construction to thereby allow jobs in construction and then on to operation to be realised. At its peak during construction around 5600 workers will be required, during operation a permanent staff of around 900 will be required[34].

[33] Value for Money Framework, DfT, July 2017, https://www.gov.uk/government/publications/dft-value-for-money-framework, accessed 10 December 2017

[34] Sizewell C Stage 2 Pre-application Consultation Document – Autumn/Winter 2016

- Potential help to developments in the planning pipeline - Three employment sites with planning permission have been identified as being within the vicinity of the scheme and therefore a proportion of GVA impacts from these sites may be considered relevant.
- Its ability to improve the accessibility of the Suffolk coast's tourism assets and contribute to a growth in tourism and the spending that would then occur in the local economy. The proposed SEGway scheme should increase accessibility to the region, reduce the overall congestion and journey time and thus increase the attractiveness of Suffolk as a tourist destination. In this way, there could be an induced level of tourist travel to the region. Variable Demand Model (VDM) output from the scheme transport model have been used to estimate a potential increase in visitor numbers, and by using data from the 2015 Destination Research Report[35] on types of visit and spending, a forecast increase in tourism spending has been calculated.
- This appraisal does not seek to claim benefits for future employment allocations associated with the Local Plan Reviews to 2036, which are still in development. There may be an opportunity to revisit this at the submission of the Full Business Case when this should be more certain.
- Further detail on the appraisal may be found in the *Economic Assessment Report annex.*

Summary of Wider Impacts (Employment & Tourism GVA)		
Sizewell C employment GVA impacts	GVA Impact (5% - 15% attribution)	£30m - £115m
Carlton Park Industrial Estate, Saxmundham (DC/16/1928/OUT)	GVA Impact for employment (10% - 20% attribution)	£9m – £19m
Bentwaters Park, Rendlesham (DC/16/1280/OUT)	GVA Impact for employment (10% - 20% attribution	£5m - £9m
Bentwaters Studios, Rendlesham (DC/17/2950/FUL)	GVA Impact for employment (10% - 20% attribution	£10m - £21m
Tourism GVA impacts	GVA impacts Extra visitors	£42.6m 19,733 extra annual visitors in 2023 24,074 extra annual visitors in 2038

Table 8-1 : Summary table of employment and tourism wider impacts, 60-year appraisal period, 2010 prices, discounted to 2010

The Carlton Park Industrial Estate is north of the proposed scheme in close proximity to the A12 and the scheme would provide more reliable accessibility to Ipswich, Colchester and the south east of England. It would be reasonable to assume that the proposed scheme would have travel accessibility benefits to this site, even in the absence of model testing to demonstrate as such. Therefore, the range of GVA estimates associated with this site could be taken into consideration when assessing overall possible wider impacts for the scheme as part of the Value for Money Statement

The case for Bentwaters Park and Bentwaters Studio are more difficult to conclude upon, given their spatial location away from the A12, so these are not considered in the summary of the wider impacts for the scheme, but have been reported here for context.

8.4 Enable the delivery of new housing developments

Suffolk Coastal District Council's Local Plan is at the Issues and Option stage and provides a range of possible outcomes for economic growth and where it is located, depending on housing need, aspirations to realise the LEP's key growth sectors and whether the housing numbers from the unresolved Devolution Deal are realised.

This could include significant housing growth along and close to the A12 corridor, in communities such as Saxmundham and Leiston (potential range of housing growth varies from 200 to over 1,500 homes), with potential further development at Framlingham, Woodbridge, East of Ipswich and Felixstowe albeit with a likely need for additional infrastructure to mitigate the impacts. More certainty on the scale and location of growth and

[35] Visit Suffolk Market Segmentation, Destination Research Ltd, 2015, https://www.suffolk.gov.uk/assets/planning-waste-and-environment/suffolks-countryside-and-wildlife/Visit-Suffolk-Market-Segmentation-2015-FINAL-Report.pdf accessed 14 December 2017

whether certain options are more likely to realise specific growth scenarios will be known in 2018 / 19. The dependency of these homes on improvements such as the A12 will then be able to be quantified with use to the SCTM and local plan modelling.

Waveney District's Council's First Draft Plan has recently consulted on its First Draft Local Plan, with allocations for additional employment land associated with the Lowestoft and Great Yarmouth Enterprise Zone and an additional 700+ homes in communities in the far south of the district, most closely linked to deriving benefits from the SEGway scheme. Waveney District Council is currently working towards submitting a final version of the Local Plan for Examination in late spring 2018 with adoption scheduled for the end of 2018.

8.5 Impact on the Strategic Road Network

The A12 in the study area connects two sections of the SRN, reflecting its former trunk road role until 2001. It currently links the A14 at the grade separated Seven Hills Interchange east of Ipswich to the A47 at the Bascule Bridge (over Oulton Broad) in Lowestoft. Should the Lake Lothing Third Crossing be built (projected to open in 2022), this interface with the SRN will shift to the east of Lowestoft to enhance port operations and traffic flow.

The scheme by removing one of the major substandard sections of single carriageway route, will improve business, commuters and visitors' connectivity to and from the SRN at each end, as well as the key towns of Ipswich and Lowestoft accessed primarily from county roads, and locations in Essex, Norfolk, Cambridgeshire, London and the Midlands via the SRN.

8.6 Access to International Gateways

The scheme will improve connectivity (through reduced journey times) to the following international ports in Suffolk for both importers and exporters in East Suffolk:

- The Port of Lowestoft – home to the operation and maintenance base of the Greater Gabbard Offshore windfarm and offers extensive facilities for constructing parts destined for North Sea oil and gas fields and wind farms. It currently handles around 100,000 tonnes of cargo a year, with potential for further growth associated with continued investment in the offshore clean energy.
- The Port of Ipswich – currently the UK's biggest grain exporting port and handles three million tonnes of cargo a year. Associated British Ports have provided further context and their support to the scheme in response to the non-statutory public consultation described in section 9.2.3.
- The Port of Felixstowe – currently the UK's busiest container port with a 40% share of the UK container market and is predicted to grow by up to 50% in capacity by the end of the decade and handle a million additional containers by 2025.
- The Regional Director for Associated British Ports, which operates Lowestoft and Ipswich ports, submitted a letter in favour of the SEGway proposals. He noted that ABP Lowestoft forms a key part of the SEGway offering in supporting the offshore wind sector, whilst ABP Ipswich is the UKs main agricultural export port and would benefit significantly from improvements to the A12 north of Ipswich, which is used to transport much of Suffolk's agricultural produce to the port.
- The Director stated that SEGway improvements would provide significant transport accessibility enhancements for both of these key sectors. The company supports any form of improvements to the scheme section of road, however noted that Option LB1d (referred to as Option 2 in the consultation) would clearly provide the greatest benefit to the economy and local residents. A copy of this letter of support can be found in Appendix A.

8.7 Summary

Key Observation

The scheme supports the following national strategic objectives:

- *Easing congestion and providing an upgrade to an important regional route for business, commuters and visitors in East Anglia*
- *Helps to facilitate future delivery of Sizewell C nuclear power station in the 2020s, which is expected to create 25,000 different job roles over its lifetime, with a peak construction workforce of 5,600 on site and 500 off site, and a legacy operational workforce of 900 post commissioning. While other sources of infrastructure are also vital to the delivery of this project, it is reasonable to consider complementary GVA benefits associated with this employment of £30 million to £115 million (2010 prices, discounted to 2010) as part of SEGway's value for money framework.*
- *Helps to improve the accessibility and perception of the region for growth in the visitor economy. It is reasonable to consider GVA benefits of £42 million (2010 prices, discounted to 2010) as part of SEGway's value for money framework.*
- *Helps to facilitate growth at local employment sites (£9 million - £19 million GVA, 2010 prices, discounted to 2010). It also supports the delivery of new homes in Suffolk Coastal District and Waveney District over the future Local Plan Period to 2036. The number will depend on the outcome of their Issues and Options Consultation and First Draft Local Plan respectively (Suffolk Coastal district reporting in 2018 with Examination likely in 2019; Waveney district reporting and subject to Examination in 2018) in terms of location, the scale of growth and any potential attribution to SEGway.*
- *Improves connectivity for businesses, commuters and visitors to and from the Strategic Road Network at the A14 at Seven Hills Interchange (east of Ipswich) and the A47 at Lowestoft.*
- *Improves connectivity for importers and exporters to and from the county's international gateways at the Ports of Lowestoft, Ipswich and Felixstowe each of which plays a major role in the productivity of the UK's economy (energy, agricultural products, containers). Associated British Ports have noted their support for the SEGway scheme (with a preference for LB1d) because of the benefits to accessibility to both the ports of Lowestoft and Ipswich and the importance of their role in trade and high value sectors.*

9. Planning Position, Stakeholder and Political Support

9.1 The Planning Position

Support for improvements to the A12 between Lowestoft and Ipswich are referenced in Strategic Policies 10 and 13 of the Adopted Suffolk Coastal District Local Plan and policy CS15 of the Waveney District Council Local Plan (2009), and Policy WLP1.4 in the First Draft (new) Waveney Local Plan.

Suffolk County Council's proposals are based on the assumption that the scheme will and can be delivered on time by seeking planning permission through the Town and Country Planning Act. However, Government could consider using the NSIP route for this scheme. This would further reduce the risk of any delays, which given the dependency with the construction timeline of Sizewell C would be highly desirable. For the avoidance of any doubt, the County Council is of the view that the scheme can be delivered on time via either of the routes.

Following funding award, Suffolk County Council intends to develop the scheme's preliminary design and environmental impact assessment with a view to make a planning application in late 2018 for determination in early 2019. To de-risk the scheme's programme, Suffolk County Council intend to proceed with environmental surveys and the scoping of ground investigation and topographical surveys in early 2018.

9.2 Stakeholders

9.2.1 Statutory Consultees

As part of the Strategic Outline Business Case the Environment Agency was consulted with regard to their requirements for the proposed Suffolk Energy Gateway river crossings and flood plain impacts. This consultation took place at this time in order to include a cost for suitable river crossing measures within the Strategic Outline Business Case.

Further engagement with organisations such as the Environment Agency, Historic England and Natural England is planned for the development of the design and planning application in 2018.

9.2.2 Business

An extensive engagement exercise was first undertaken with local businesses in January and February 2016. This involved an online survey with 50 respondents and two business consultations in the local area featuring 78 attendees from local business. The 2016 stakeholder engagement exercise was commissioned by Suffolk County Council and undertaken by the Suffolk Business School. It was also supported by the Institute of Directors, the Federation of Small Businesses, the British International Freight Association, the Ipswich and Suffolk Small Business Association, Lowestoft Vision as well as Ipswich Central and Business Associations in Framlingham, Leiston and Saxmundham.

The objectives of the exercise were:

- to understand the impacts of congestion issues on various sections of the A12 between Ipswich and Lowestoft on existing business activities and the extent to which it constrains prospects for growth; and
- to understand the likely value that Suffolk's Energy Gateway would add for local businesses.

The results have previously been described in section 2.8.1.

9.2.3 Members of the public

Suffolk County Council and Suffolk Coastal District Council have been engaging with the residents of Farnham and Stratford St. Andrew during and following the consultation exercises undertaken by EDF Energy in relation to the plans for Sizewell C nuclear power station in 2016 and 2017. For these communities this engagement has centred on appropriate mitigation measures to cater for a growth in traffic from Sizewell C during its construction. This has naturally led to parallel discussions as to the suitability of SEGway or variants to deliver an appropriate mitigation. This has been supplemented by the non-statutory public consultation on SEGway referred to below.

The Suffolk Energy Gateway proposals were consulted on between 12 September and 25 October 2017. The consultation offered two possible route options for a proposed bypass to the Four Villages along the A12; options, the single carriageway LB2d and dual carriageway LB1d. 298 responses had been received and processed as of 27 October 2017, with 50 submitted by statutory stakeholders, businesses and organisations and 249 submitted by individuals.

The respondents generally favoured the dual carriageway option over the single carriageway, however would accept the single carriageway over no improvements. When questioned about route preference, of 207 responses to the question, **51% of all responders** (106 people) indicated that they would accept **Route Option LB2s**, whereas **72% of all responders** (150 people) would accept **Route Option LB1d**, confirming the broader level of support the dual carriageway scheme has within the area. 25% of people would not support either Route Option.

The comments received regarding the single carriageway option generally noted that it did not make the most of the opportunity to improve connectivity across the region or best serve longer term economic growth aims:

- *'A single carriageway retains the existing disconnect between Ipswich and the coast. The journey is difficult, long and unpleasant, and a single carriageway would be a waste of an opportunity to develop valuable links from the Sizewell C and later developments to Ipswich and beyond.'*
- *'Very short sighted to only build a single carriage way road. This doesn't future proof access to the North and over time dual carriageway to the north may be developed.'*
- *'Will not serve the long term needs of the region.'*
- *'A single carriage road will never help connectivity of Lowestoft and North East Suffolk with London and the south and help regenerate this area in the way that a good dual carriageway would do.'*

However, some still felt that a single carriageway option would be sufficient:

- *'The quicker it's completed the better!'*
- *'A single carriageway is sufficient to achieve the aims indicated in the proposals. Money spent on works to existing roads would benefit the local communities more as would additional footpaths to enable communities to connect better.'*

By comparison there was wider support for the dual carriageway option, with many noting that it would futureproof the route and provide much greater opportunities for economic growth in key sectors looking further ahead:

- *'This option would bring major benefits to the area for decades to come.'*
- *'Dual carriageway has to be the right choice it will make journey times quicker and safer and allow for the likelihood of business development along the route allowing for the additional traffic.'*
- *'This option provides more capacity and so is an investment for the future and therefore worth the extra money.'*
- *'This will help revitalise the north east of Suffolk.'*
- *'A sensible long term benefit to the whole region.'*
- *'This is the only option! We must look to the future regarding volume of traffic, economic growth, improving coastal links for tourism, businesses etc. Do not be short sighted and be governed by the cost of a dual carriageway. This road should have been built many years ago.'*

However, some felt that the dual carriageway scheme still had downsides:

- *'Too costly, displaces rather than removes blight.'*
- *'You can make much better use of £50m elsewhere. It will just create problems elsewhere.'*

Looking at both Route Options, some respondents felt that neither scheme went far enough in addressing wider transport issues along the A12 as a whole:

- *'Both routes are only a small part of the issues with the A12. Unless these options are part of a wider plan for the whole A12 north of Ipswich up to Lowestoft, then you are just adding to the pinch point problems elsewhere.'*

Further details on the public consultation responses can be found in the *Public Consultation Report annex.*

9.3 Political Support

The Suffolk Energy Coast Delivery Board was set up in 2014 to maximise the benefits for Suffolk as a result of the investment in energy in the county. It brings together public and private sector interests at MP, Member, Officer and business level. The aim of the Board was to ensure that Suffolk takes advantage of the community benefit from these schemes, whether it be from Sizewell C or the off-shore wind industry, to make sure a long lasting legacy is secured. The Energy Board has been engaged on a regular basis during 2017, with scheme publicity shared for political engagement at all levels of Government. The Board supports the scheme.

Suffolk County Council's cabinet has been kept informed of progress throughout 2017 through the quarterly Capital Programme Report which covers this and all other major capital expenditure planned by the County Council.

Suffolk Coastal District Council have been closely involved in the development of the scheme.

The scheme is also supported by the New Anglia Local Enterprise Partnership.

Copies of relevant letters of support are provided in Appendix A.

MPs, district councils, town and parish councils also took the opportunity to respond to the non-statutory public consultation, with a summary of the key points below.

Member of Parliament for Waveney

Peter Aldous MP welcomed infrastructure improvements in the area of Wickham Market and Saxmundham, that would bring economic benefits to the area, and the constituency of Waveney, and pointed out that the A12 needs to be flowing freely throughout the year for the region to economically prosper.

He strongly stated support for the dual carriageway option bypassing Marlesford, Little Glemham, Stratford St Andrews and Farnham (Route Option LB1d) on the grounds of safety, traffic flow and cost efficiency. He also said that there are clear economic and environmental benefits for Suffolk as a whole in pursuing this option.

Suffolk Coastal & Waveney District Council

Economic growth is the primary reason that the District Councils are supportive of the SEGway scheme as detailed in the East Suffolk Business Plan. The Plan identifies the four village bypass as an integral component of improvements to the A12.

The Councils indicated the importance of the scheme in enhancing development potential of rural areas of the districts which currently suffer from poor accessibility. They also noted the potential for enhanced regeneration of Lowestoft, with the scheme potentially enabling greater support for existing nationally significant infrastructure projects in the vicinity, alongside the potential major infrastructure development of Sizewell C. Finally, the Councils also noted the issue of community severance in villages along the existing section of the A12 route, and the potential benefits a bypass could provide in reducing levels of traffic, increasing safety and improving community cohesion.

The District Councils stated that it is clear that Route Option LB1d meets more of the objectives.

Southwold Town Council

Southwold Town Council stated that only Route Option LB1d would provide any advantages.

Snape Parish Council

The Parish Council broadly supported the proposals, however raised concerns regarding traffic at the northern end of the proposed bypass. It felt that this would funnel traffic destined for Aldeburgh, Leiston, the Snape Maltings and possibly Sizewell C development down the A1094, potentially increasing congestion including at the hazardous Snape Crossroads junction. The Parish Council requested that proposals to resolve this problem be considered as part of the overall traffic management arrangements in this part of Suffolk.

Farnham with Stratford St Andrew Parish Council.

The Parish Council stated that the existing A12 has a negative impact on the local area, with residents who live adjacent to the A12 suffering damage to their properties as a result of vibration and pollution. The Council's preference was Route Option LB1d, but stated that Route Option LB2s would also be acceptable. They also requested that due consideration is given to any home owners or land owners that may be impacted by the proposed routes.

Great Glemham Parish Council

The Parish Council supports Route Option LB1d, given the likely increase in traffic to the Sizewell C site and the other sites and developments. The Council requested signage encouraging drivers going through the Four Villages listed to use the by-pass and to deter others from doing so.

Campsea Ashe Parish Council

The Parish Council felt that here is general agreement in Campsea Ashe of the need for improvement of the A12 north of the B1078 junction to reduce traffic volumes on the existing road, improve road safety and reduce community severance of the Four Villages. It was stated that there is less certainty about which of the two routes is preferable or whether an alternative solution is required.

The Parish Council noted issues with the proposed routes crossing environmentally sensitive water meadows and potential negative impacts on historic sites of interest. It was also felt that both north and south junctions of the proposed bypass would likely create additional traffic (including HGVs) along the B1078 and minor roads through Campsea Ashe. The Council stated that whilst there are economic benefits, they felt uncertain as to whether the scheme represents value for money, particularly in light of the negative environmental impacts.

Marlesford Parish Council

Marlesford Parish Council stated that they only support Route Option LB1d and urged Suffolk County Council to adopt a route for Route Option LB1d which as far as possible follows the Modified Preferred Route accepted by the Inspector in 1995.

The Parish Council raised concerns that many of Marlesford's residents, as they go about their daily lives, will suffer from the negative impacts set out in the consultation document; including volume of traffic, safety at the Bell Lane and Marlesford Road junctions, traffic noise and pollution. The Council also noted difficulty for pedestrians crossing the A12 on foot, particularly in relation to accessing the bus stops in Marlesford, situated directly on the A12.

Hacheston Parish Council

The Parish Council stated that the daily lives of residents of Hacheston are affected by delays, slow driving and the inability to overtake slower drivers. The Council requested that the Modified Preferred Route which accepted by the inspector in the 1995 Public Inquiry, be considered (this is similar to the proposed Route Option LB1d).

Wickham Market Parish Council

Wickham Market Parish Council stated that they supported proposals to bypass the Four Villages, and favoured Route Option LB1d.

10. Other interfaces

10.1 Internal and External Business Drivers

As noted elsewhere in the Strategic Case, A12 SEGway helps to facilitate the future potential delivery of a Nationally Significant Infrastructure Project on Suffolk's Energy Coast – namely Sizewell C Nuclear Power Station. EDF Energy's Sizewell C Stage 2 Pre-Application Consultation Report (2016) describes the scale of the infrastructure likely to be required to mitigate the impacts of the power station's construction and ongoing operation. It outlines plans to "optimise local benefits that directly arise from the construction and operation of the power station". Modelling carried out by EDF Energy concludes that additional HGVs along the A12 during the construction of Sizewell C would "increase the frequency of large vehicles meeting at Farnham bend, and so could exacerbate existing safety concerns" as well as lead to increased congestion. In addition, the consultation has sought to take into account local residents' concerns with regards to severance when assessing the three proposed options for mitigation of traffic volumes in the four villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford.

EDF Energy is still to undertake its Stage 3 consultation for Sizewell C, followed by a period of time to develop and submit a Development Consent Order, moving to the examination, possible approval and Final Investment Decision, before construction can commence. This timetable needs to be considered alongside the timetable for the construction of SEGway.

In developing the programme, the Project Delivery Team has considered the scheme's relationship with EDF Energy's Sizewell C plans. In order to secure a private sector contribution from EDF Energy, solutions have to be found for the public sector to forward fund SEGway. The scheme has to be affordable and should not delay SEGway's ability to solve longstanding problems and deliver wider benefits for the East Suffolk economy beyond just the energy industry.

EDF Energy was consulted as part of Suffolk County Council's SEGway stakeholder engagement process in October 2017. EDF Energy has been undertaking its own consultations and examining traffic mitigation options for the A12 as part of the Sizewell C project. EDF Energy advised that it supports the objectives of the SEGway scheme in delivering economic growth in East Suffolk and enhancing local residents' quality of life.

EDF Energy has acknowledged that it would be prepared to make a proportionate financial contribution towards the SEGway scheme, in lieu of providing an alternative highway scheme along the A12 (identified as options within EDF Energy's Sizewell C Stage 2 consultation), which would be required to enable its delivery of the Sizewell C project. It has been accepted by Suffolk County Council that the Sizewell C project would not justify the delivery of a four village bypass as mitigation in its own right. Therefore, any contribution by EDF Energy towards the SEGway scheme would be proportionate to the level of contribution necessary to mitigate the impacts of the Sizewell C project, and is contingent on the SEGway scheme being in place to support the construction of Sizewell C. Suffolk County Council is still in discussion with EDF Energy what a proportionate mitigation for Sizewell C would be, but believes that a two village bypass would be the minimum mitigation.

However, in the interim whilst the SEGway scheme awaits approval, EDF will continue to develop and promote its own alternative scheme, to enable the application for development consent for the Sizewell C project to proceed.

A copy of EDF's Letter of Support is enclosed in Appendix A.

As discussed in more detail in the Financial Case and Management Case, the local contribution currently proposed does not rely on EDF Energy's contribution at this stage. This would place unnecessary uncertainty on SEGway's timescales and the ability to deliver the scheme in time for the construction period of Sizewell C, given that EDF Energy is yet to submit its Development Consent Order. If and when Sizewell C receives its Development Consent Order and a positive Final Investment Decision, EDF Energy would then be in a firm position to commit funding. This would allow the local contribution to be substantially increased by being funded through the in-lieu payment of its mitigation requirements (for details, see Financial Case). However, EDF Energy would be looking to progress construction of the new nuclear power station as quickly and efficiently as possible. Crucially this would be more rapidly than the time it would then take for Suffolk County Council to be given the 'green light' to design, plan and procure the construction of SEGway to successfully mitigate all the

impacts of Sizewell C's construction on this part of the A12. Thus, it will be essential to progress the scheme before the outcome of a Development Consent Order and Final Investment Decision is known.

Key Observation

The window of opportunity to deliver an improvement to meet both existing and future problems and realise the opportunities for growth as efficiently as possible is now – reinforcing the importance of funding through the present Large Local Majors Bid process.

10.2 Synergy

Suffolk County Council are also promoting major investment in transport improvements in Ipswich (Upper Orwell Crossing) and Lowestoft (Lake Lothing Third Crossing), as fast track schemes through the Large Local Major Schemes process. These schemes in addition to SEGway would promote better connectivity within and between Suffolk's two major settlements, and two of its three key ports.

11. Conclusion

11.1 Principal Findings

The Strategic Case has presented the reader with a comprehensive summary of the demographic, economic, travel and traffic and growth context in the study area. It has provided a good summary of the work done to develop a preferred option over the years, and it has provided a summary of strategic fit with policies at the national, regional and local levels. It has summarised the contribution of the scheme to key Government policies, including creating economic growth and improving access to international gateways. It has also provided a summary of the level of support for the scheme amongst stakeholders, and key interfaces for consideration. A summary of the main points are now presented below.

11.1.1 Demographics, economy and travel market

Population growth in Suffolk Coastal district has been partly driven by domestic migration, reflecting the attractiveness of the area as a place to live.

Suffolk Coastal district's economic performance is good, having closed its productivity gap with Ipswich and matched that of England as a whole. It has a sound basis to grow further through more investment in infrastructure. The more peripheral Waveney district experiences an entrenched and persistent productivity gap compared to the rest of England on a par with Northern regions of England. It follows that improved transport links such as SEGway that better connect the district with Suffolk Coastal, Ipswich and the rest of England will start to make a difference to closing that gap.

The New Anglia LEP identifies SEGway as a key factor for driving growth in the local economy, including maximising the potential of the energy, life sciences and biotechnology, ICT, visitor economy, agriculture, food and drink and the transport, freight and logistics sectors. This is reinforced by further evidence presented by the East of England Energy Zone and Destination Research Report on Tourism, and our own research and analysis.

The strong draw of employment in Ipswich and Martlesham versus the weaker pull of Lowestoft and the smaller towns between there and Farnham results in a strong imbalance in the direction of commuting journeys on the A12.

Half of all northbound journeys to work on the A12 are destined for locations close to the northern end of the SEGway scheme, such as Sizewell, Leiston and Aldeburgh. Journeys beyond Lowestoft from the south to Great Yarmouth are less significant, given the distance and road conditions currently experienced.

Suffolk Coast's tourism season is relatively long covering all of spring and summer. The coast is the most visited attraction, with key destinations in the county being Southwold and Aldeburgh. For the Heritage Coast covered by Suffolk Coastal District and the south of Waveney District the predominant type of trip is a long weekend break using independent hotels, with implications for evening peak flows towards the end of the working week, as well as travel when in Suffolk. Trips to the Lowestoft section of the coast are more likely to be family orientated, week long and based at a holiday park where there will be more activities on site, likely to reduce the need for travel.

11.1.2 Traffic metrics and problems

Annual Average Daily Traffic Flows on the A12 at Farnham = 16,600 vehicles. This however hides a significant variation in flow over the course of the year. Traffic flow patterns on the A12 in the study area are representative of a road that plays a significant role in the region's tourism economy:

- Greatest observed traffic flows are experienced in the summer months
- Summer average weekend traffic flows are higher than average weekday flows from October to March
- Higher northbound Saturday flows are balanced by higher southbound Sunday flows reflective of a significant influx of weekend tourism related traffic from London and the South East to the region.

- Evening peak flows are higher than morning peak flows reflecting the dual role that the road plays in terms of the commuter and visitor economy. This difference is most pronounced in the summer.

The high variability of speeds through the Four Villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford confirm observed congestion issues and also indicate the potential for stop-start nature of traffic which is likely to worsen with increasing traffic in future.

HGV deliveries are an essential part of the ongoing function and operation of local and regional businesses which add immense value to the region's economy. The A12 being the primary artery for travel in East Suffolk plays a key role despite the substandard nature of this section of the road. The Farnham Bend is noted as a local pinchpoint on the A12. This is caused by both a combination of HGVs meeting at the narrowest section, and also more frequently by vehicles attempting to turn into and out of side roads with poor advance visibility.

The section of A12 passing through the villages of Farnham, Stratford St Andrew, Little Glemham and Marlesford experiences a higher frequency of personal injury accidents than expected for older single carriageway 'A' roads. The A12/ A1094 junction at Farnham in particular has been identified as an accident hotspot with road safety initiatives introduced to try to reduce the safety risk for road users.

11.1.3 Future growth

EDF Energy is proposing to construct a new nuclear power station at Sizewell, known as Sizewell C, comprising two reactors, immediately to the north of the existing single reactor Sizewell B power station. This location was identified in 2011 by the Government's *National Policy Statement for Nuclear Power Generation (2011)* as a potentially suitable site for new nuclear build because of its proximity to an existing power station (Sizewell B), the North Sea and its relatively isolated setting.

EDF undertook a phase 2 consultation in 2016, with the current expectation that subject to the achievement of a Development Consent Order and Final Investment Decision, construction would likely commence in the mid-2020s. Suffolk County Council's previous analysis has noted that this is likely to result in high volumes of two-way vehicle movements for personnel and freight during both the construction process and to a lesser extent its operation. This will likely result in increased traffic flows on the A12, exacerbating all existing transport related problems along this stretch of the A12. Suffolk County Council is still in discussion with EDF Energy what a proportionate mitigation for Sizewell C would be, but believes that a two village bypass would be the minimum mitigation. EDF Energy has acknowledged that it would be prepared to make a proportionate financial contribution towards the SEGway scheme, in lieu of providing an alternative highway scheme along the A12 (identified as options within EDF Energy's Sizewell C Stage 2 consultation), which would be required to enable its delivery of the Sizewell C project.

If and when Sizewell C receives its Development Consent Order and a positive Final Investment Decision, EDF Energy would then be in a firm position to commit funding. This would allow the local contribution to be substantially increased by being funded through the in-lieu payment of its mitigation requirements (for details, see Financial Case). However, EDF Energy would be looking to progress construction of the new nuclear power station as quickly and efficiently as possible. Crucially this would be more rapidly than the time it would then take for Suffolk County Council to be given the 'green light' to design, plan and procure the construction of SEGway to successfully mitigate all the impacts of Sizewell C's construction on this part of the A12. Thus, it will be essential to progress the scheme before the outcome of a Development Consent Order and Final Investment Decision is known.

Suffolk Coastal District's Local Plan is at the Issues and Options stage and provides a range of possible outcomes for economic growth and where it is located, depending on housing need, aspirations to realise the LEP's key growth sectors and whether the housing numbers from the unresolved Devolution Deal are realised.

This could include significant housing growth along and close to the A12 corridor, in communities such as Saxmundham and Leiston (potentially a range between 200 to over 1,500 homes) albeit with a need for infrastructure (such as improvements to the A12) to mitigate the impacts. More certainty on the scale and location of growth and whether certain options are more likely to realise specific growth scenarios will be known in 2018 / 2019.

Waveney District's Council's First Draft Plan has recently consulted on its preferred options for growth, with allocations for additional employment land associated with the Lowestoft and Great Yarmouth Enterprise Zone and an additional 700+ homes in communities in the far south of the district, most closely linked to deriving benefits from the SEGway scheme.

Even if no improvements are made to the existing situation, traffic levels on this section of the A12 are expected to increase, exacerbating current issues. This will be further impacted by increase in traffic associated with growth in the local population and economy and the potential development of Sizewell C power station in the mid-2020s. The other side of these growth related problems is that planning well and delivering appropriate mitigation early and in advance of absolute need will help to make a strong contribution to the Economic Strategy for Norfolk and Suffolk, Local Plans and Local Transport Plan aims and aspirations – delivering benefits from homes and jobs as well as quality of life.

11.1.4 Objectives and Option Assessment

The Strategic Case has set out a series of objectives associated with a core aim for the project ***"to enable, support and deliver economic growth in East Suffolk and enhance the quality of life for residents.*** This represents a recognition that Suffolk County Council, Suffolk Coastal District Council and Waveney District Council are working in partnership on a wide range of issues including housing, economic development and infrastructure to the benefit of the whole area. Excellent progress has been made with capturing benefits from the offshore wind industry. SEGway in conjunction with related schemes in Ipswich (Upper Orwell Crossing) and Lowestoft (Lake Lothing Third Crossing) provides a further stimulus to connectivity, economic growth and regeneration beyond the area's immediate impact to Ipswich, Lowestoft and potentially Great Yarmouth.

The Strategic Case has briefly mentioned a summary of the option appraisal work undertaken by Suffolk County Council since 2006, including multiple studies into the problems and opportunities associated with the Four Villages and the surrounding economic hinterland. This culminated in the Strategic Outline Business Case appraised by DfT in 2016, and subsequent work by the project team to appraise options to develop a preferred option for funding by DfT. The supplementary Option Assessment Report annex and Economic Case provide the reader with more detail on this work.

11.1.5 Policy Fit

The scheme is closely aligned with the outcomes sought by pertinent national, regional and local policy documents. Specific emphasis should be given to the following:

The scheme supports the following national strategic and policy objectives:

- The SEGway scheme supports the aims of the National Policy Planning Framework and the Transport Investment Strategy, in creating a more reliable, less congested, and better connected transport network; reducing the volume of HGVs and other through-traffic through rural villages on main roads; enhancing productivity and responding to local growth priorities; and supporting the creation of new housing.
- Helps to facilitate future delivery of Sizewell C nuclear power station in the 2020s, which is expected to create 25,000 different job roles over its lifetime, with a peak construction workforce of 5,600 on site and 500 off site, and a legacy operational workforce of 900 post commissioning. While other sources of infrastructure are also vital to the delivery of this project, it is reasonable to consider complementary GVA benefits associated with this employment of £30 million to £115 million (2010 prices, discounted to 2010) as part of SEGway's value for money framework. This aligns with the aims of the Industrial Strategy White Paper, Clean Growth Strategy, NIC's Congestion, Capacity and Carbon report, and the National Infrastructure Delivery Plan, particularly in enhancing access to and facilitating investment in low carbon electricity installations, including new nuclear power at Sizewell C and offshore wind, enabling them to make an even more significant contribution to the UK's energy mix. It will also facilitate the growth of both sectors and the companies that support and supply them both now and in the future, namely the East of England Energy Zone.
- Improves connectivity for importers and exporters to and from the county's international gateways at the Ports of Lowestoft, Ipswich and Felixstowe each of which plays a major role in the productivity of the UK's economy (energy, agricultural products, containers). Associated British Ports have noted their support for

the SEGway scheme (with a preference for LB1d) because of the benefits to accessibility to both the ports of Lowestoft and Ipswich and the importance of their role in trade and high value sectors.

Regional Strategy and policy

- The Economic Strategy for Norfolk and Suffolk aims to spearhead economic growth in the East of England, focussing on high-impact growth sectors, including clean energy, ICT, advanced agriculture, food and drink, tourism, heritage and culture, and transport, freight and logistics. It includes The Norfolk and Suffolk Energy Coast as a priority place for investment, emphasising the importance of undertaking vital improvements to the A12. The SEGway scheme would contribute to realising benefits in these priority areas.
- SEGway helps to ease congestion and providing an upgrade to an important regional route for business, commuters and visitors in East Anglia. In this way it improves connectivity for businesses, commuters and visitors to and from the SRN at the A14 at Seven Hills Interchange (east of Ipswich) and the A47 at Lowestoft.
- SEGway helps to improve the accessibility and perception of the region for growth in the visitor economy. It is reasonable to consider GVA benefits of £42 million (2010 prices, discounted to 2010) as part of SEGway's value for money framework.

Local Strategy and policy

- The Suffolk Local Transport Plan acknowledges that an intervention is long overdue on this section of the A12 and would tackle a wide range of current and future issues.
- The recent first draft 2017 Waveney Local Plan references plans to upgrade the A12 between Marlesford and Farnham in order to increase accessibility to the district from Ipswich, and to support the potential development of Sizewell C. Similarly, Suffolk Coastal district's recent Local Plan Issues and Options, strengthens the case for investment in the A12, including SEGway.
- SEGway helps to facilitate growth at local employment sites (£9 million - £19 million GVA, 2010 prices, discounted to 2010). It also supports the delivery of new homes in Suffolk Coastal district and Waveney district over the future Local Plan Period to 2036. The number will depend on the outcome of their Issues and Options Consultation and First Draft Local Plan respectively (Waveney district reporting and likely to be subject to Examination in 2018; Suffolk Coastal district reporting in 2018 with Examination likely in 2019) in terms of location, the scale of growth and any potential attribution to SEGway.
- The East Suffolk Tourism Strategy and the Economic Strategy for Norfolk and Suffolk aim to increase the volume and value of tourism, to extend the tourist season, to create compelling destinations and to link visitors to more experiences. The SEGway scheme would facilitate this through improving underlying transport links which are the foundation of the visitor economy. SEGway could also help encourage active tourism, such as walking and cycling by reducing severance of key routes.

11.1.6 Stakeholder views

East Suffolk's businesses have ranked an improvement to the A12 between Marlesford and Farnham as the most pressing for investment to help solve problems of journey time reliability, the perception of the area's suitability for inward investment and journey times to customers and for staff.

Visitors and potential visitors to East Suffolk mention the coast as the standout highlight of a trip to Suffolk. Unfortunately, key road links including the A12 are seen as the worst thing about Suffolk, reinforcing the need for intervention.

Suffolk County Council and Suffolk Coastal District Council have been engaging with the residents of Farnham and Stratford St. Andrew during and following the consultation exercises undertaken by EDF Energy in relation to the plans for Sizewell C nuclear power station in 2016 and 2017. For these communities this engagement has centred on appropriate mitigation measures to cater for a growth in traffic from Sizewell C during its construction. This has naturally led to parallel discussions as to the suitability of SEGway or variants to deliver an appropriate mitigation. This has been supplemented by the non-statutory public consultation on SEGway referred to below.

The Suffolk Energy Gateway proposals were consulted on between 12 September and 25 October 2017. The consultation offered two possible route options for a proposed bypass to the Four Villages along the A12; options, the single carriageway LB2d and dual carriageway LB1d. Respondents generally favoured the dual carriageway option over the single carriageway, however would accept the single carriageway over no improvements. When questioned about route preference, of 207 responses to the question, 51% of all responders (106 people) indicated that they would accept Route Option LB2s, whereas 72% of all responders (150 people) would accept Route Option LB1d, confirming the broader level of support the dual carriageway scheme has within the area. 25% of people would not support either Route Option.

11.1.7 Selection of the Preferred Option

Summing up, the rationale for LB1d as the Preferred Option is as follows:

- ✓ *Value for money (see Economic Case)*
- ✓ *Strategic fit with scheme objectives and Government policy*
- ✓ *Reduced travel costs for businesses, commuters and visitors through improved connectivity to other major centres and the Strategic Road Network*
- ✓ *Increased road safety benefits by providing safer opportunities for overtaking slow moving vehicles*
- ✓ *Its ability to provide a continuous high quality road as a gateway to East Suffolk's towns and villages, energy, tourist and other business assets from the south, making it an easier place to do business, visit, live and work*
- ✓ *Its ability to provide the headroom for East Suffolk's energy and tourism industries and settlements to grow at the pace they want, rather than be dictated by transport network constraints*
- ✓ *Improved reliability of travel for East Suffolk's businesses and hauliers to and from the county's ports at Felixstowe, Ipswich and Lowestoft and the Strategic Road Network (A12, A14, A47)*
- ✓ *Strength of support from the public, business, MPs, district, town and parish councils.*
- ✓ *Qualitative and quantitative performance against the scheme objectives.*

It is proposed to retain option LB2s as a Low-Cost Alternative during the development of the Full Business Case. This is to provide sufficient flexibility in view of option LB1d's increased cost. This will require full and further consideration as the scheme design is developed in more detail for planning, further consultation and Full Business Case development.

11.2 Expected Updates at Full Business Case stage

The Strategic Case presented is comprehensive in its breadth and depth across all the relevant areas expected of the Strategic Case. With the Full Business Case for DfT final sign off not expected until 2020 it is expected that principal updates will focus on:

Full Business Case Update

- *Review of strategic fit based on emerging policies such as the Government's plans for a Major Road Network for England and any further updates to the region's Strategic Economic Plan*
- *Review of local plan growth and impacts on traffic issues and GVA wider benefits*
- *Review of Sizewell C plans and impacts on traffic issues and GVA wider benefits*
- *Description of political, stakeholder and public engagement and support*
- *Description of the scheme's updated planning position.*

Appendix A. Letters of Support

Please refer to the sub-folder within the Outline Business Case – Strategic Case folder for individual letters of support.