ANNEX C.

Detailed overview of the transport network in Suffolk

INCLUDING:

Road Network conditions and constraints

Rail infrastructure

Bus Network

Pedestrian and cycling infrastructure

Content

APPENDICES FOR ANNEX C

Part I: Suffolk road network conditions and constraints

1. Introduction

1. This part of the report provides an assessment of East Suffolk's primary highway network likely to be most impacted by SZC highlighting current conditions and constraints.
2. It identifies existing constraints afflicting the network and provides an evidence base that may assist decisions informing potential mitigation, improvement and investment proposals.
3. This document is designed to present an indication of the existing local road infrastructure only and is not considered to be a comprehensive audit.
4. A route-based study has been undertaken to focus on corridors of movement both to and from the proposed SZC site. This approach was used in order to develop an evidence base of current conditions, operations, maintenance and potential enhancements across a comprehensive catchment, and to isolate specific sections and junctions along each corridor that demonstrate the greatest pressures and demands.
5. This study does not outline requirements for the specifics of potential mitigation or improvement schemes, but rather, presents a consideration of the network that will become most stressed under current proposals.
6. This report is intended to inform considerations as to how these pressures and demands can be managed.

2. Background information

Figure 1. **Study Area**

Table 1. Populations

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. Car Ownership

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 3. Employment

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 4. Distances Travelled to Work

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 5. Mode of Travel

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%

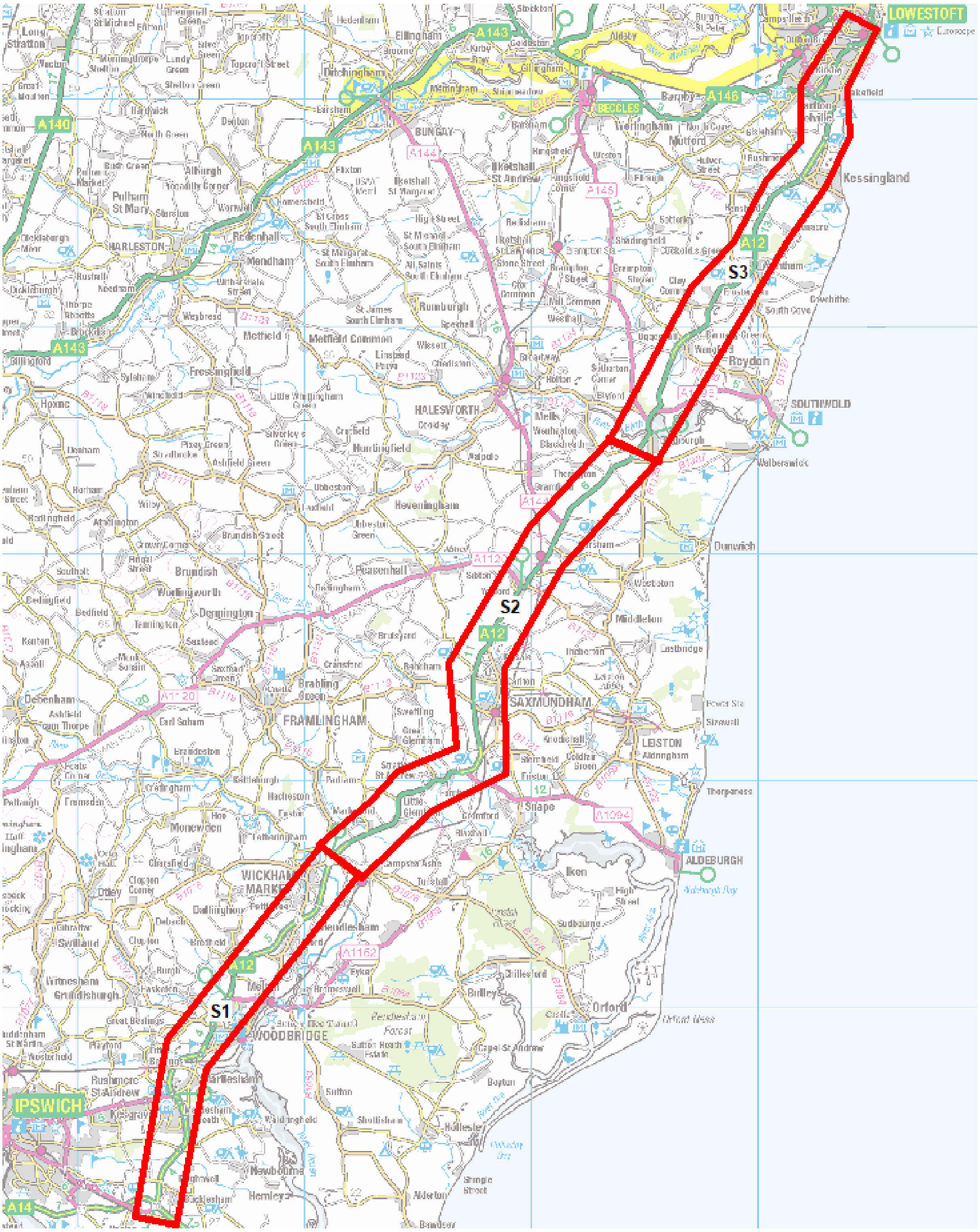
Source: Census 2011 (DC7101EWla)

N.B. On 1 April 2019, East Suffolk Council was created, covering the former districts of Suffolk Coastal District Council and Waveney District Council.

3. Route Analyses

The A12 from Ipswich (‘Seven Hills’ Roundabout (A14 Jnc 58)) to Lowestoft (Bascule Bridge (A47))

Figure 2. **Map of the A12 Ipswich to Lowestoft (distance of approx. 42 miles)**



Existing Characteristics and Route Operation

7. The A12 is the major north-south highway and most important transport link in East Suffolk. The study area comprises the section of the A12 between its junction with the A14 (junction 58) to the south and the Bascule Bridge in Lowestoft to the north.
8. This section of the A12 links the two urban centres of Ipswich and Lowestoft, providing onward connectivity to the A14 and A47 with access to London, the Midlands and beyond. It is the only major road access route north and south for commuters and freight companies transporting goods to and from the port of Lowestoft.
9. Between these two urban centres, the A12 is predominantly comprised of single lane carriageway with interspersed sections of dualling, focussed mainly around the urban boundaries of Ipswich, Woodbridge and Lowestoft. With the exception of these bypasses the majority of the A12 has evolved from historic tracks and roadways to create today's network. As a result, many sections and junctions do not comply with modern design standards.
10. A brief summary of the characteristics of the A12 from south to north is given below:
11. A14 Seven hills to the B1438 Seckford Roundabout at Woodbridge: This section comprises of relatively modern dual carriageway connected to the local network by roundabouts. The road is subject to national speed limits except the signal controlled A12/A1214 roundabout which is subject to a 50mph limit. The majority of this section is rural in nature except the communities of Martlesham Heath and its associated industrial / commercial zone to the east. Suffolk Police Headquarters is currently located off the A1214 immediately adjacent to the A12 in Martlesham. Non-motorised user facilities are limited, but a number of footways and bridleways cross the A12 at grade or via subways or bridges.
12. From the B1438 Seckford Roundabout to the Wickham Market Bypass the A12 is a combination of older dual carriageway or wide single carriageway roads passing through a semi urbanised or rural area. Junctions are either roundabouts or priority junctions and while most are derestricted, a 40mph limit is present through Woodbridge. Farlingaye High School is accessed by busses off the A12 in Woodbridge as are two service stations. Non-motorised user facilities are narrow footways along parts of the A12 with uncontrolled crossings except in Woodbridge where National Cycle Route 1 crosses the A12 via a Toucan Crossing.
13. The Wickham Market Bypass is a modern dual carriageway with grade separated junctions. No Non-motorised user facilities are provided although a number of rights of way cross at grade.
14. From the Wickham Market Bypass to the Benhall Bypass south of Saxmundham the A12 is a single carriageway road passing through a rural area and a number of small

communities (Marlesford, Little Glemham, Stratford St Andrew and Farnham). The highway has evolved and many of the numerous junctions do not meet current standards and there is a tight bend in Farnham (see figure 6). Speed limits vary between 50mph, 40mph and 30mph, the latter in the small villages. Non-motorised user facilities are sparce along the A12 limited to footways between Marlesford and Little Glemham and from Farnham northwards although many PRoW cross or join the road.

15. From Farnham to the A12/B1121 Doreys Corner junction north of Saxmundham the route comprises a section of older dual carriageway, the Benhall Bypass and then a wide single carriageway section bypassing Saxmundham. Both parts have at grade priority junctions. Due to the poor safety record a 50mph speed limit and speed camera are present at the A12/A1094 Friday Street junction that provides access to Aldeburgh. Besides this section the road is unrestricted and passes through a rural area. Non-motorised user facilities comprise a footway along the west side of the Benhall bypass and connections or crossings of rights of way.
16. From the B1121 Doreys Corner to Wangford the A12 reverts to an evolved single carriageway road passing predominately through a rural area interspersed with settlements such as Yoxford and Blythburgh. A number of significant roads (A1120, B1122 to Leiston and Sizewell, A144 to Halesworth and Bungay, A145 to Beccles, A1095 to Southwold) connect with the A12, as do numerous minor roads at substandard junctions. Speed limits vary from unrestricted to 40mph past Darsham station and 30mph through Yoxford and Blythburgh. The East Suffolk Line crosses the A12 at a level crossing at Darsham Station north of Yoxford. In two places, Yoxford and Blythburgh, the A12 has been subject to historical flooding, by surface water and tidal surges respectively. Non-motorised user facilities are limited to within the settlements and a footway between Yoxford and the A144, which includes a small length of shared cycleway / footway north of Darsham Station. As elsewhere a number of rights of way cross or connect to the A12.
17. The Wangford Bypass is another older section of dual carriageway similar to the Benhall Bypass with priority junctions linking it to minor roads.
18. From Wangford to Kessingland the A12 again returns to an evolved single carriageway road with many poorly laid out minor road junctions. The majority of the section is rural in nature, the only significant settlement is Wrentham where a 30mph limit has been implemented. Non-motorised user facilities comprise of narrow footways alongside the A12 between Wangford and Wrentham and within Wrentham itself. A signalised pedestrian crossing is present in Wrentham and rights of way cross or connect to the

A12. At Latymere Dam immediately south of the Kessingland Bypass, the A12 is close to sea level and considered to be at risk of flooding in the long term.

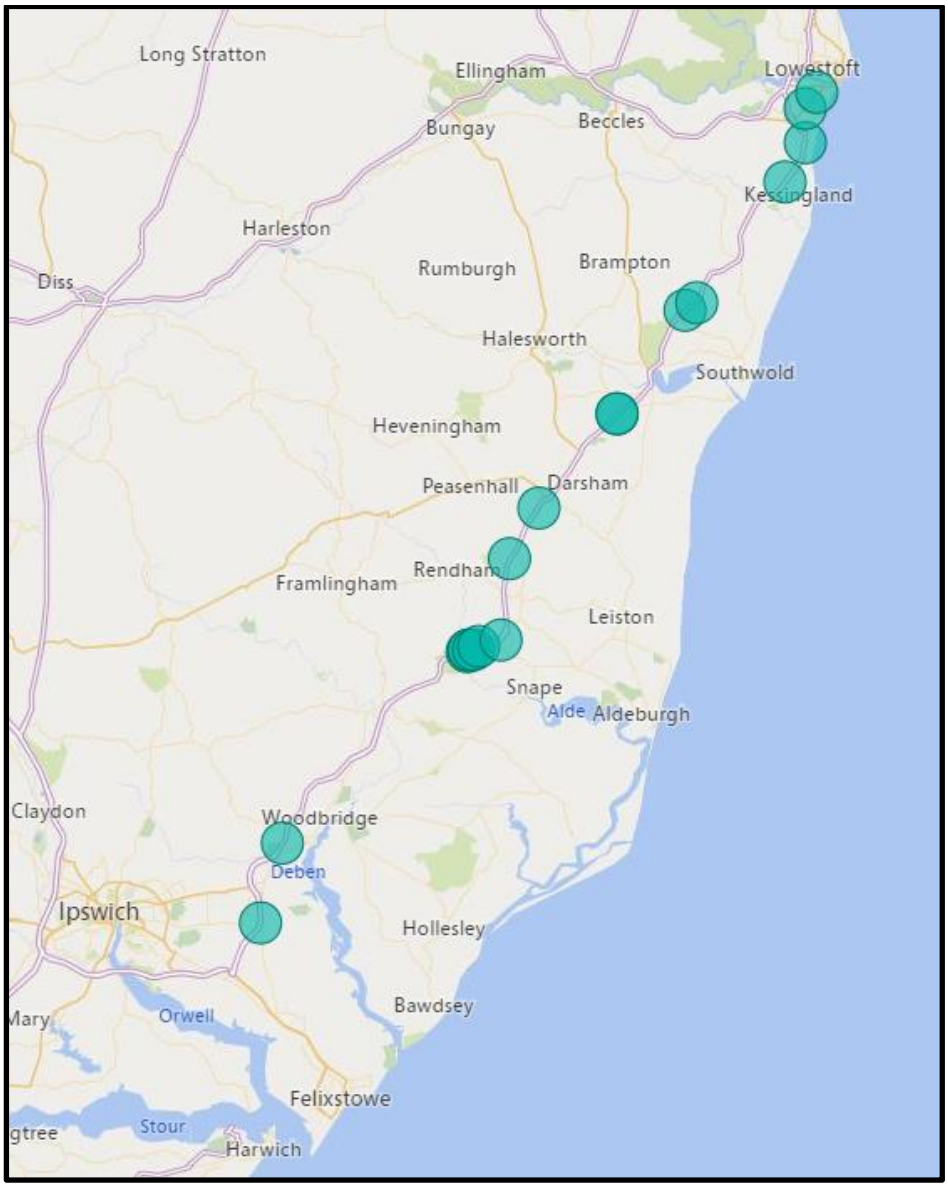
19. Kessingland Bypass is a modern dual carriageway with a roundabout at each end. No Non-motorised user facilities are present along the A12 but a subway and uncontrolled crossings are present at the south and north roundabout respectively.
20. North of the Kessingland Bypass the A12 returns to a single carriageway road and enters the urban area of Lowestoft. Historically the A12 followed the coast but following improvements now runs via Tom Crisp Way to the A12/A47 Bascule Bridge and hence connects again to the strategic road network.
21. For the benefit of analysis, the route has been divided into three main sections and further subdivided as follows:
    a. Seven Hills junction to Wickham Market
        Seven Hills junction to B1438 roundabout
        B1438 roundabout to B1438 priority junction
        B1438 priority junction to Wickham Market on-slip
    b. Wickham Market to B1387 (south of Blythburgh)
        Wickham Market on-slip to A1094 priority junction
        A1094 priority junction to B1122 priority junction
        B1122 priority junction to B1387 priority junction
    c. B1387 to Lowestoft
        B1387 priority junction to Wangford Road staggered crossroads
        Wangford Road staggered crossroads to Benacre Road / The Street staggered crossroads
        Benacre Road / The Street staggered crossroads to Bascule Bridge

Current Travel Patterns & Route Performance

Traffic Flows and Speeds

22. Annual Average Daily Traffic (AADT) and Annual Average Weekday Traffic (AAWT) flows have been assessed for a 5-year period 2014-18 taken from Automated Traffic Counts (ATCs) stationed along the study route as depicted in the map image below, with the results as evidenced in the subsequent graphics.

Figure 3. ‘A12 Study Route ATC Locations (2014-18)’



23. Vehicle classification proportions have also been provided evidencing the ratio of HGV movements against the total amount of traffic along the route, as evidenced in the following graphics:

Figure 4. Study Route Section 1A: Seven Hills Roundabout to B1438 Roundabout

Figure 3.1: Assessed Route

Map data ©2019 Google

Figure 3.2: Capacity & Capability

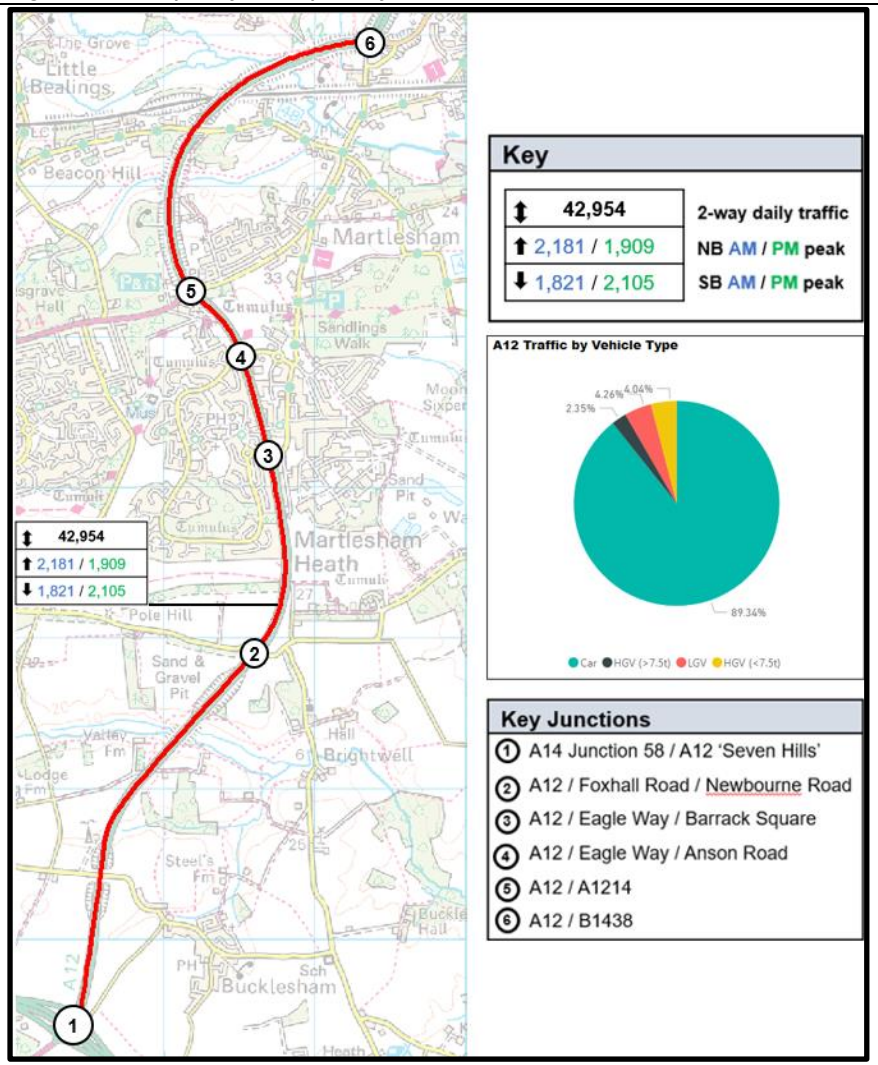


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Figure 5. Study Route Section 1B: B1438 Roundabout to B1438 Priority Junction

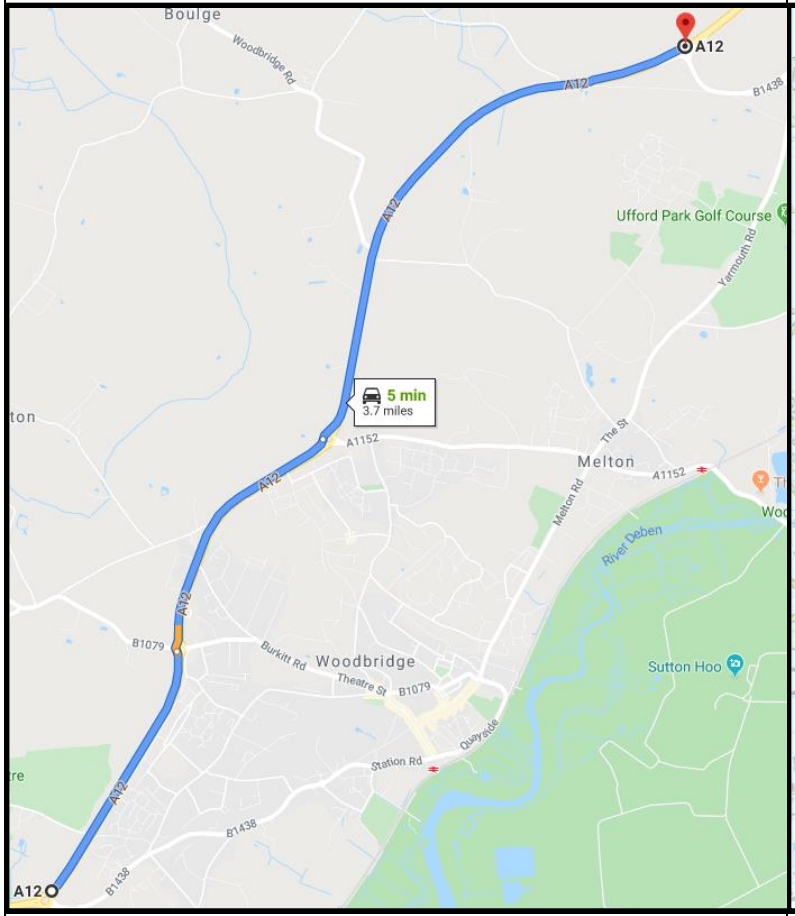
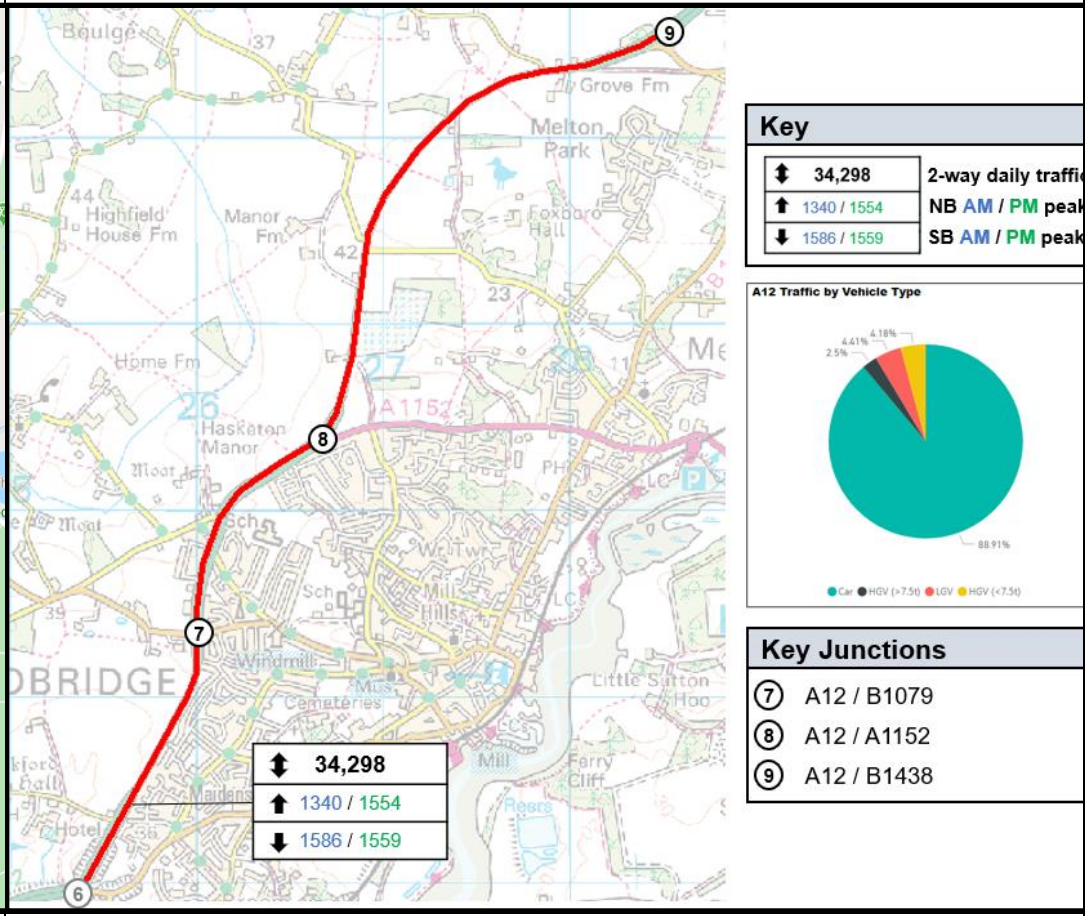
Figure 4.1: Assessed Route	Figure 4.2: Capacity & Capability
	
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Figure 6. Study Route Section 1C: B1438 Priority Junction to Wickham Market On-Slip

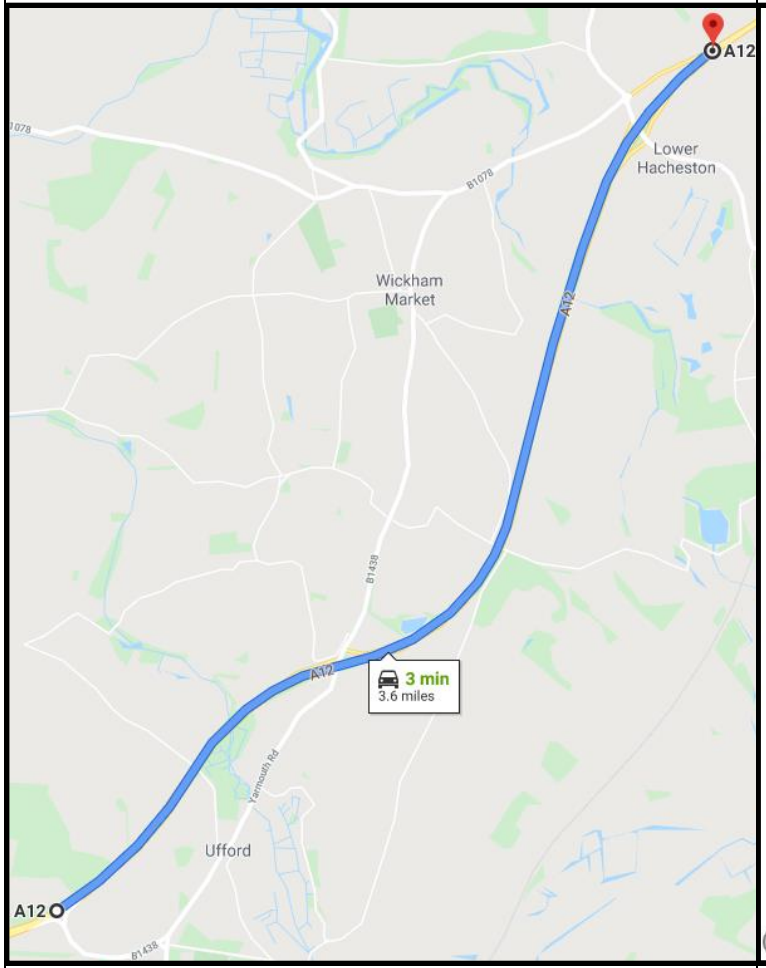
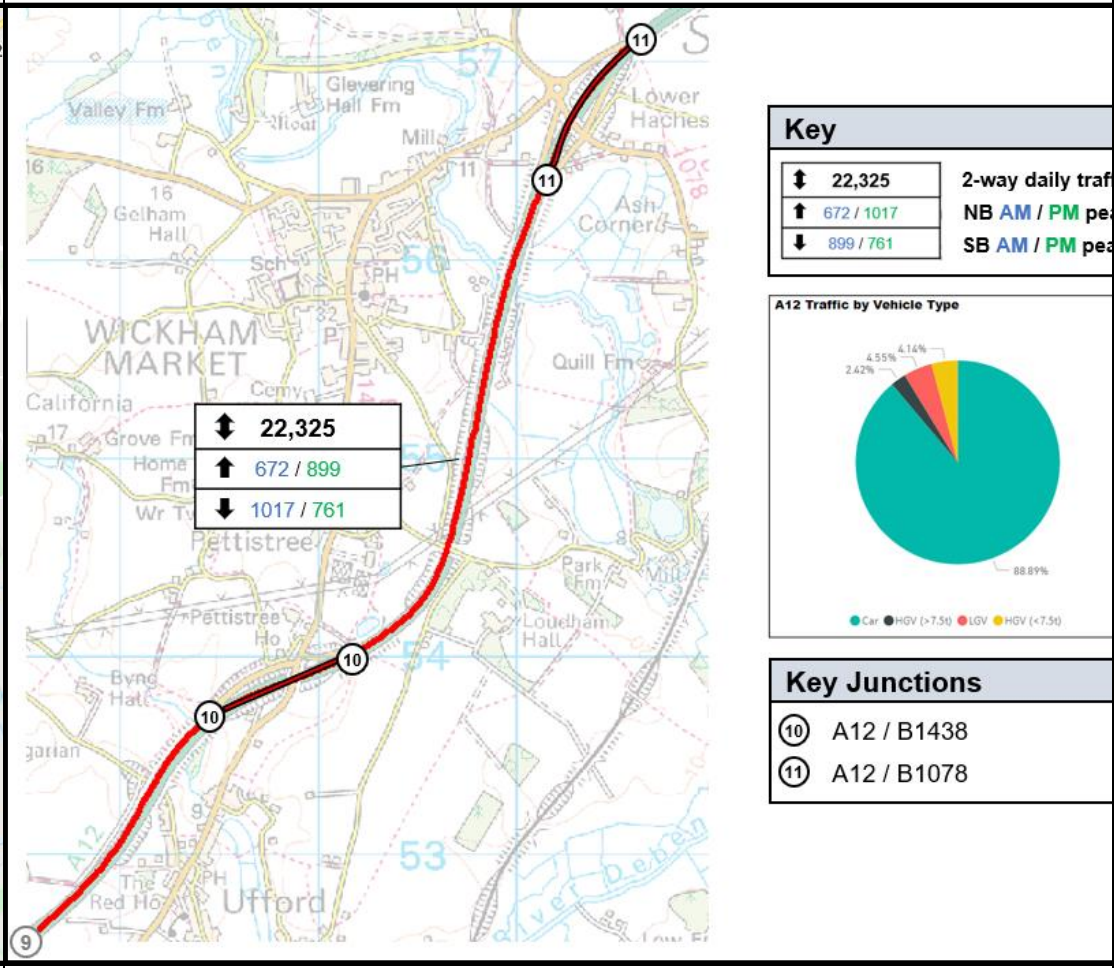
Figure 5.1: Assessed Route	Figure 5.2: Capacity & Capability
	
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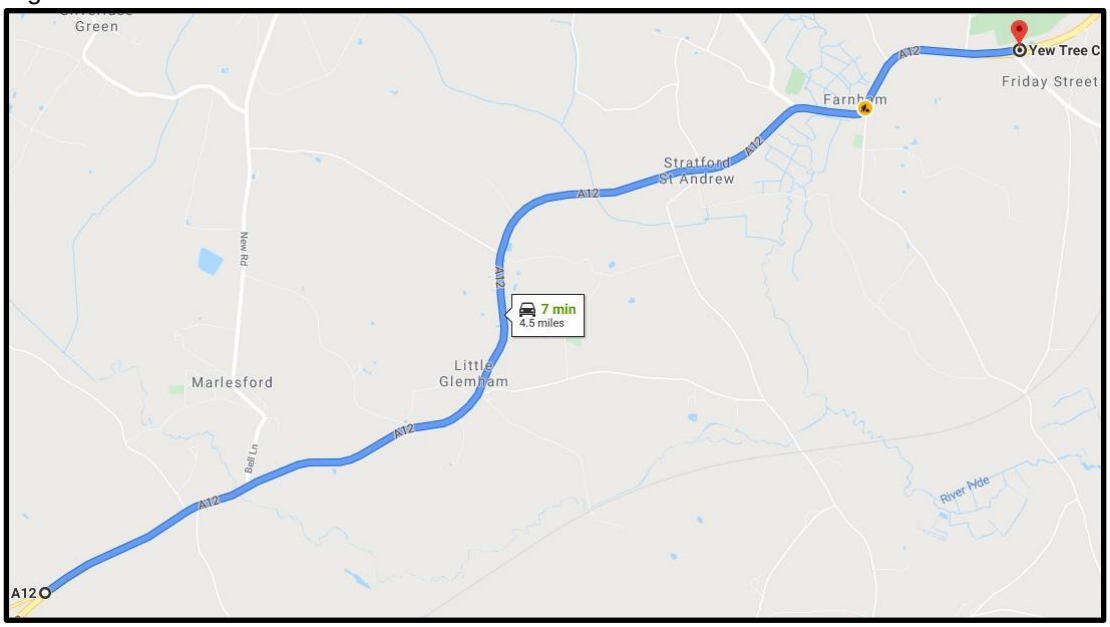
Figure 7. Study Route Section 2A: Wickham Market to A1094 Priority Junction

Figure 6.1: Assessed Route



Map data ©2019 Google

Figure 6.2: Capacity & Capability

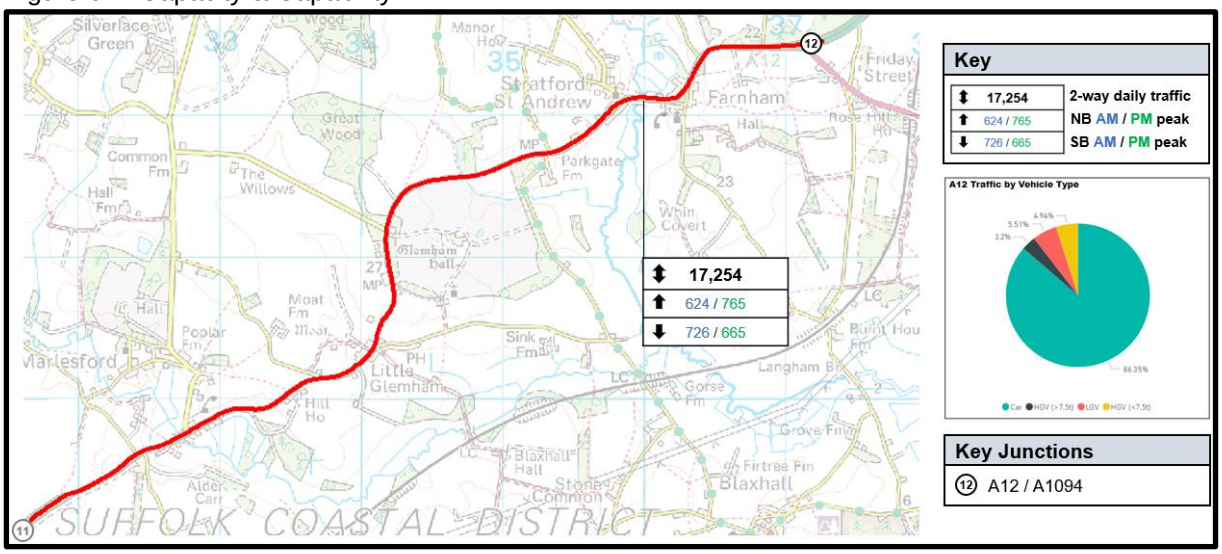


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Figure 8. Study Route Section 2B: A1094 Priority Junction to B1122 Priority Junction

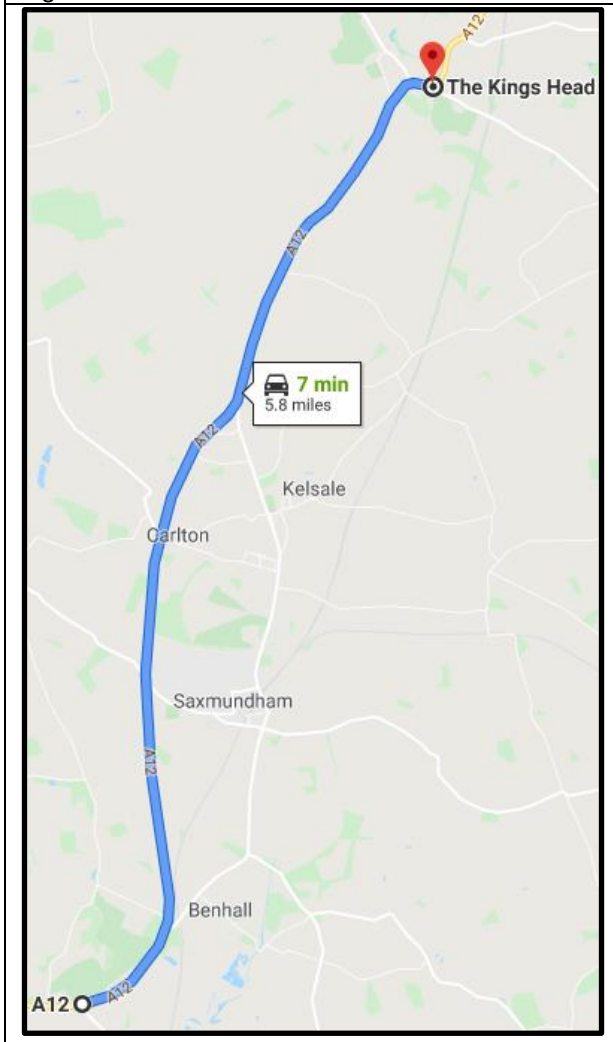
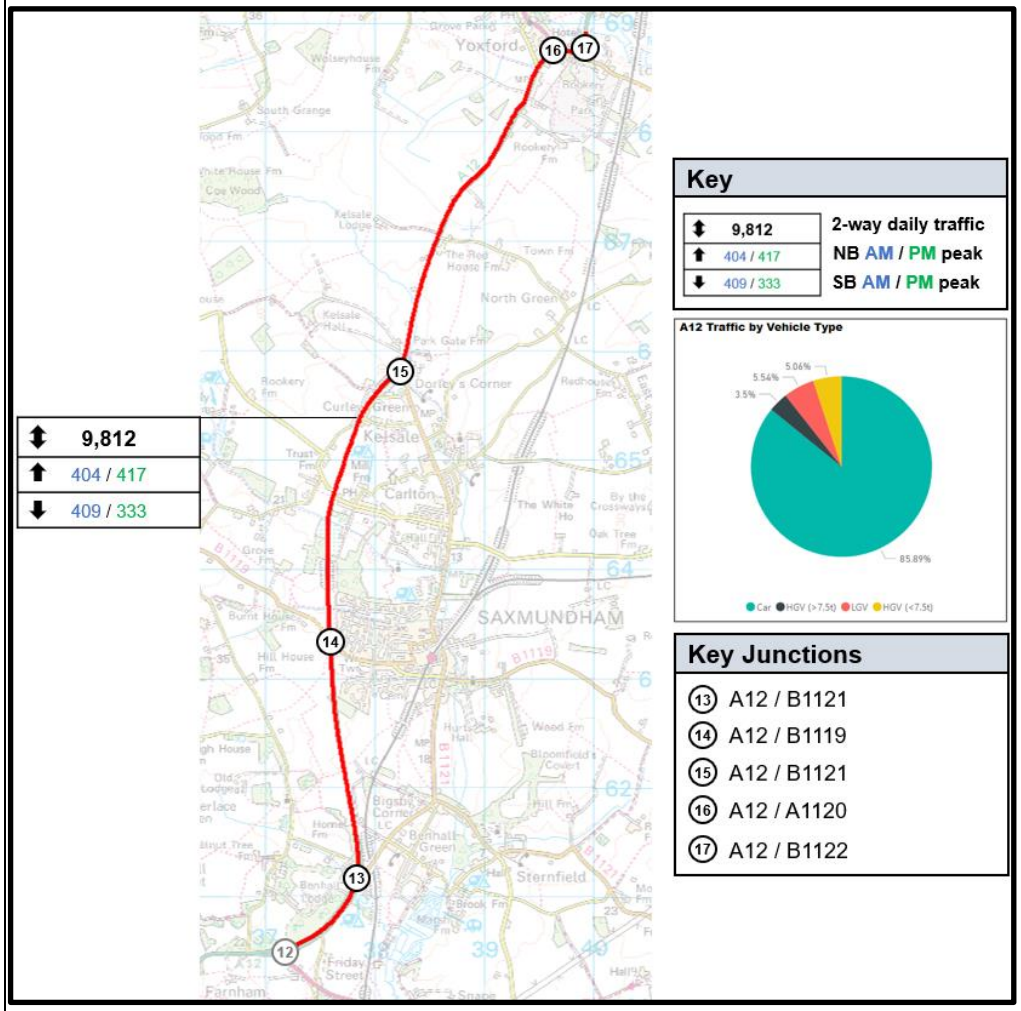
Figure 7.1: Assessed Route	Figure 7.2: Capacity & Capability
	
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Figure 9. Study Route Section 2C: B1122 Priority Junction to B1387 Priority Junction

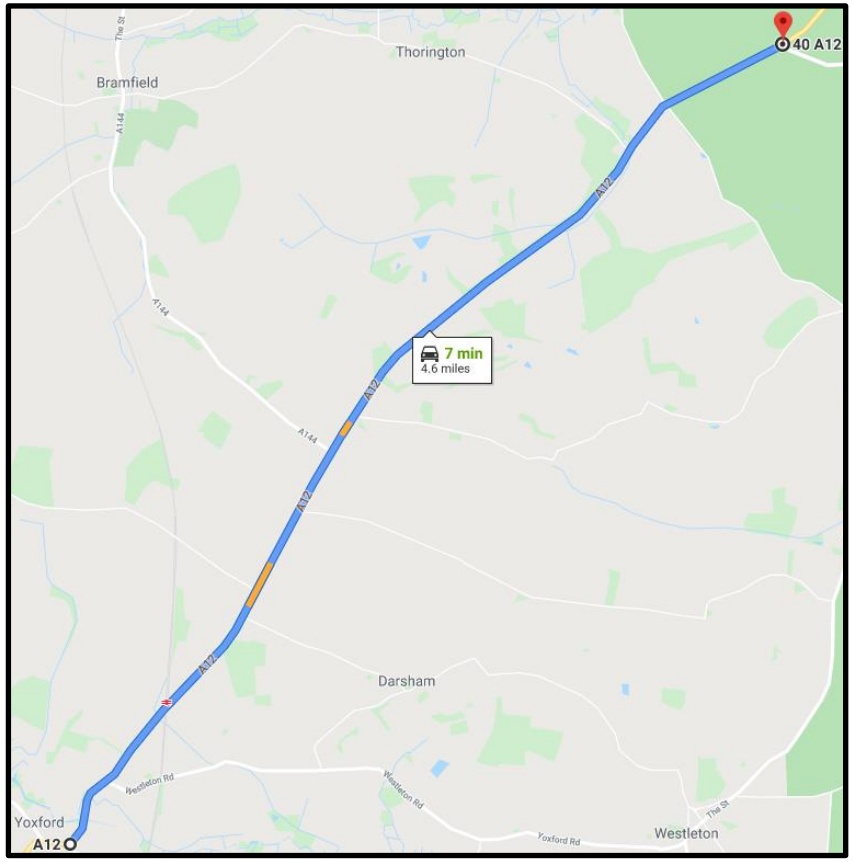
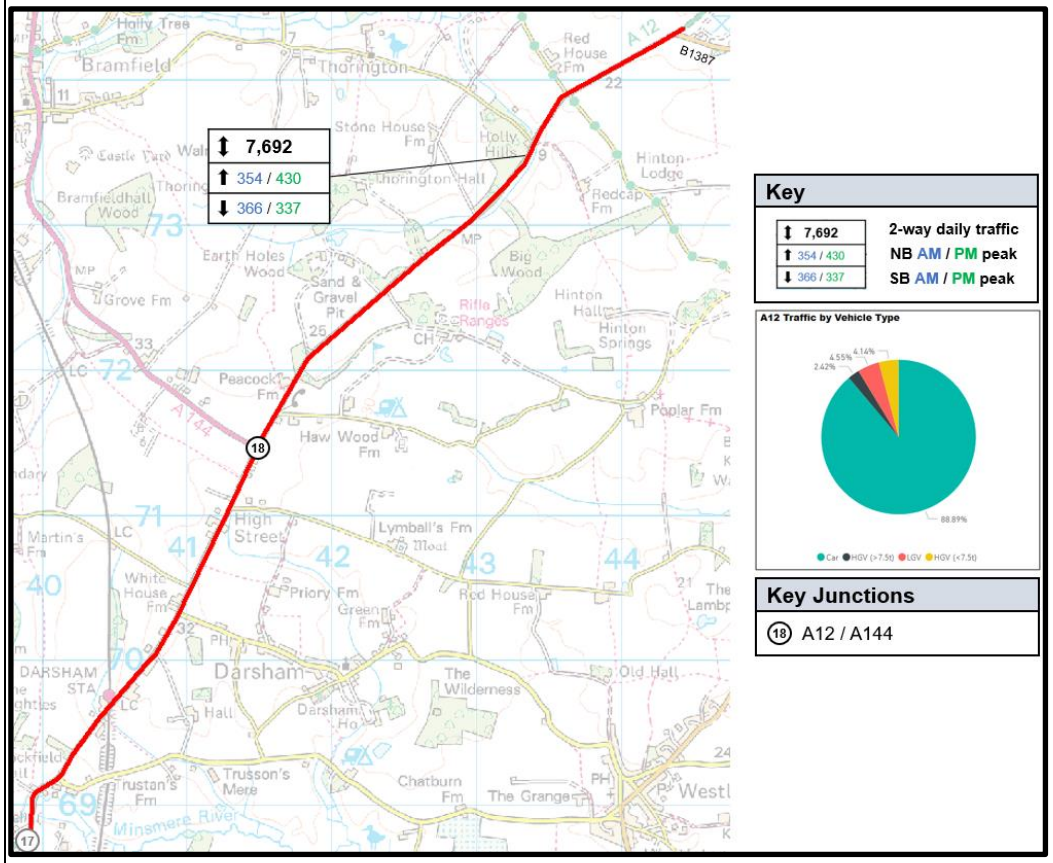
Figure 8.1: Assessed Route	Figure 8.2: Capacity & Capability
	
Map data ©2019 Google	Crown copyright and database rights, Suffolk County Council Licence No. 100023395 2020.

Figure 10. Study Route Section 3A: B1387 Priority Junction to Wangford Road Staggered Crossroads

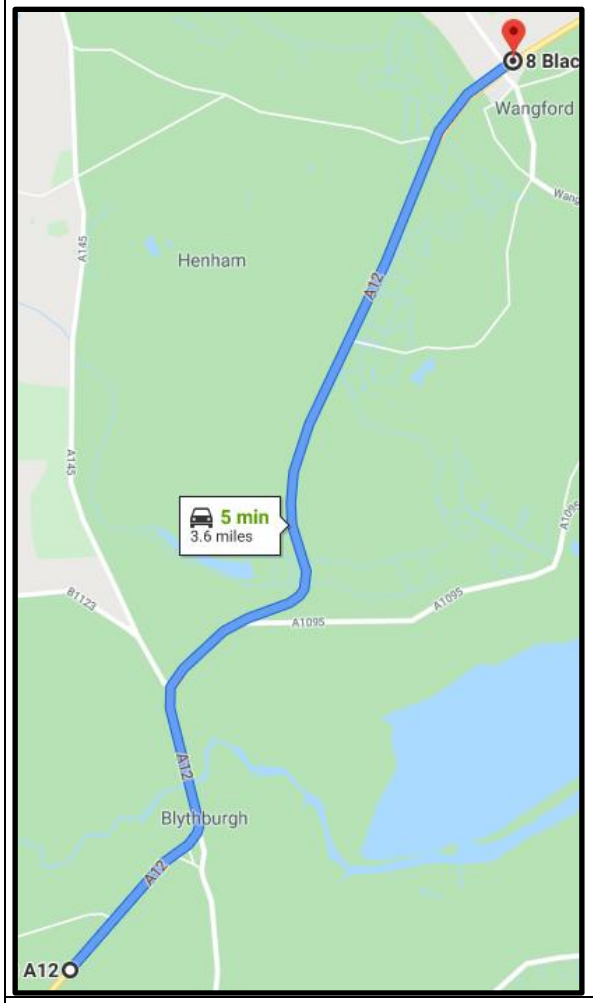
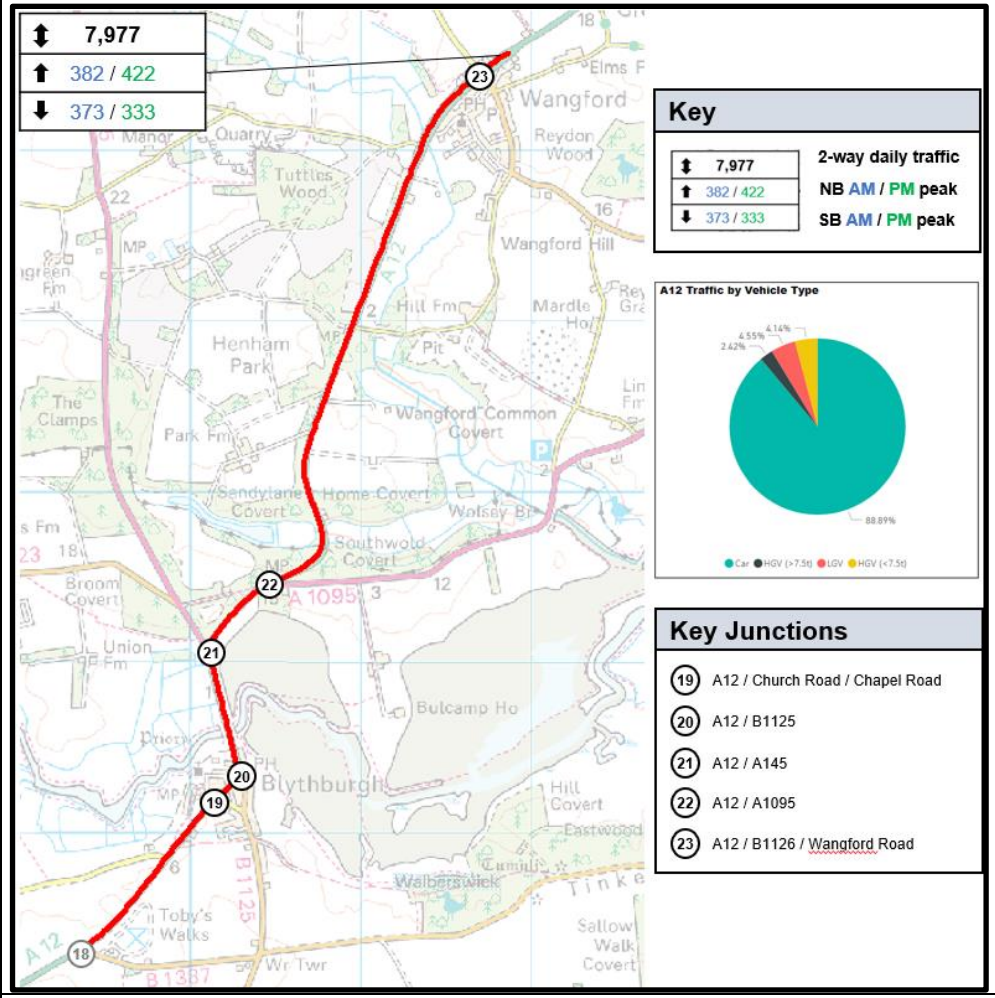
Figure 9.1: Assessed Route	Figure 9.2: Capacity & Capability
	
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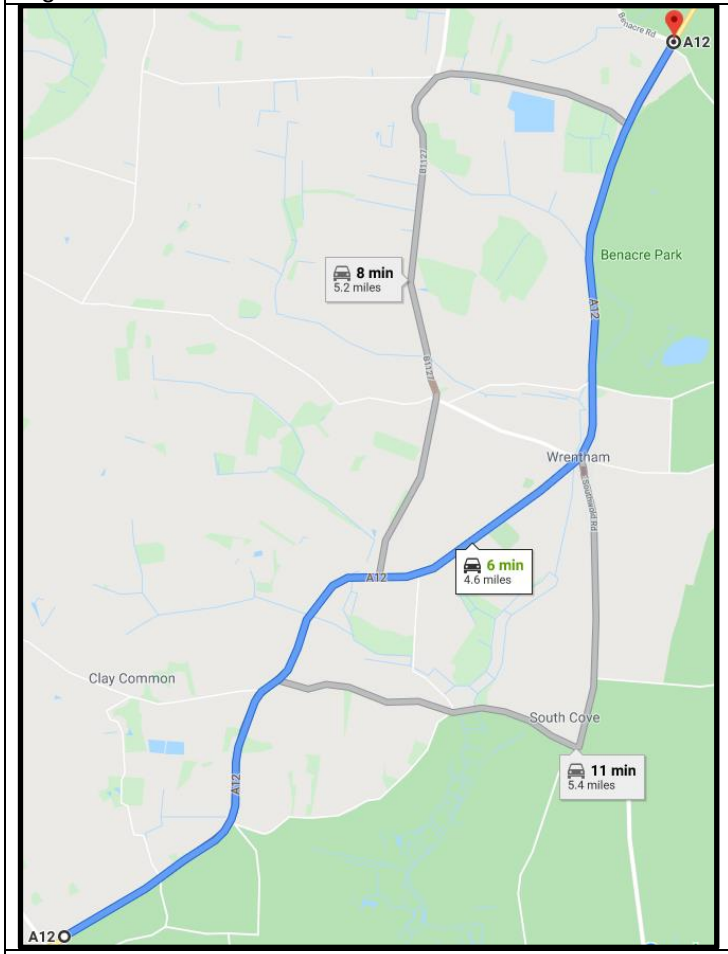
Figure 11. Study Route Section 3B: Wangford Road Staggered Crossroads to Benacre Road Staggered Crossroads

Figure 10.1: Assessed Route



Map data ©2019 Google

Figure 10.2: Capacity & Capability

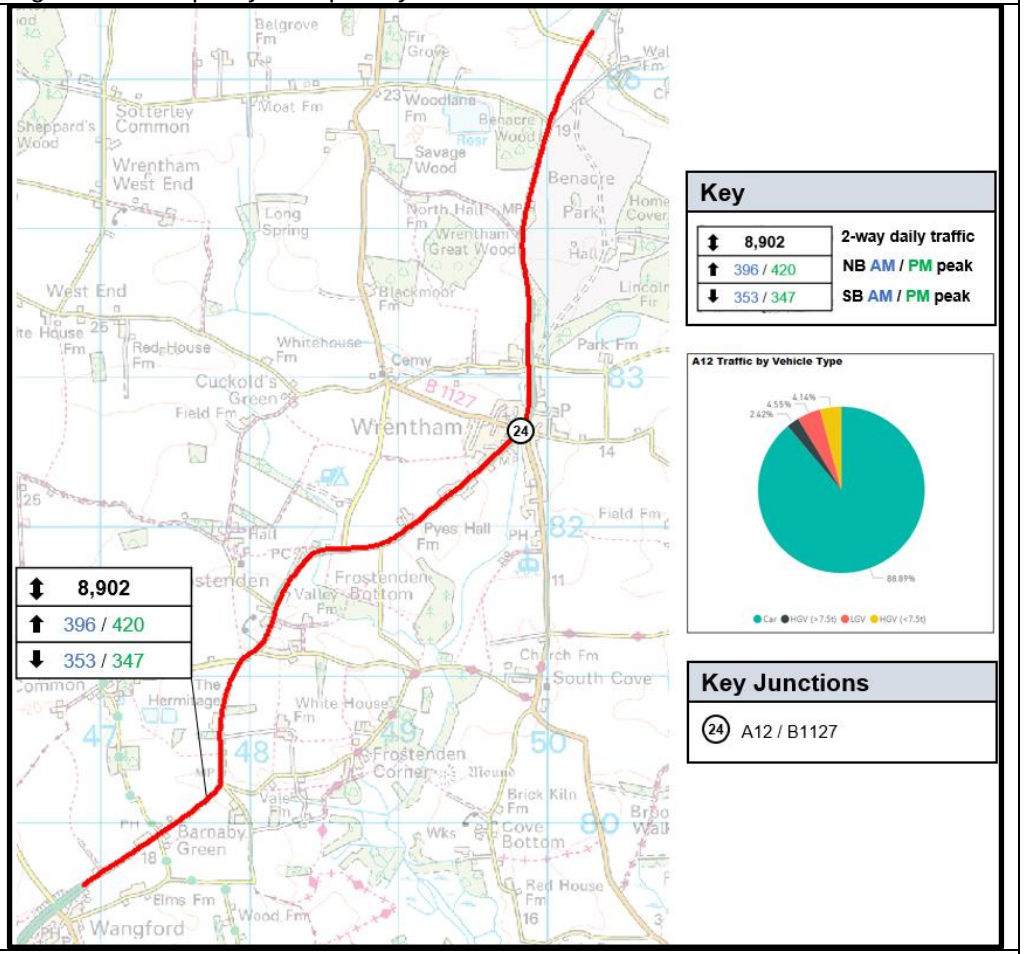


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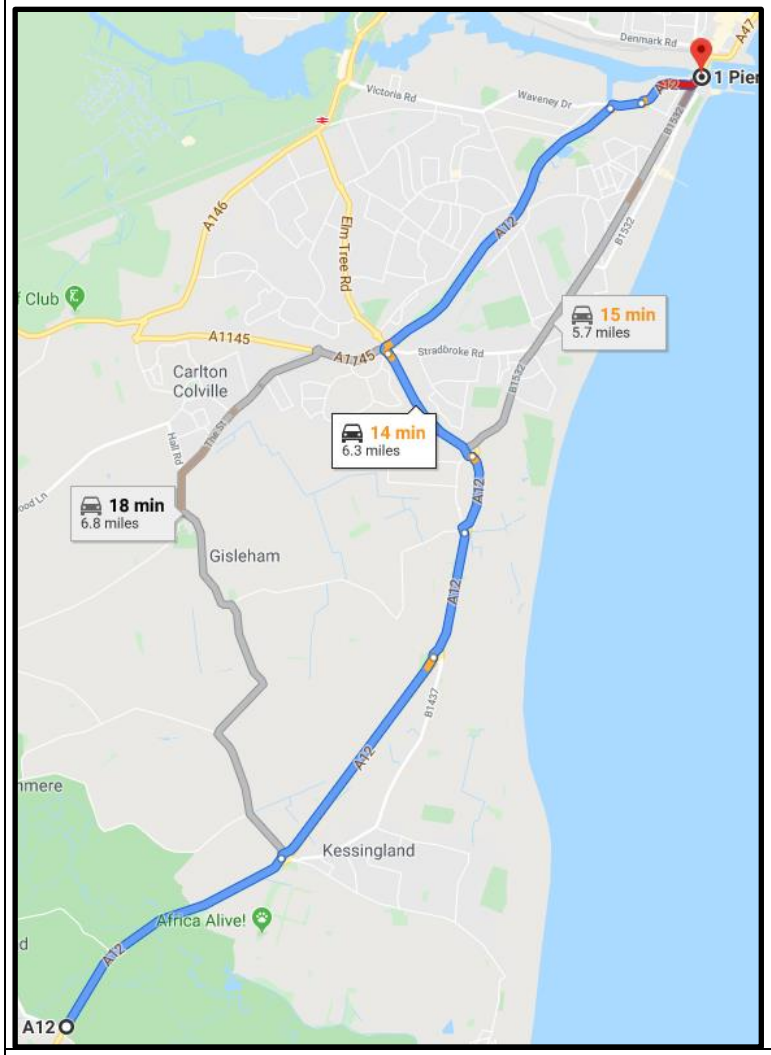
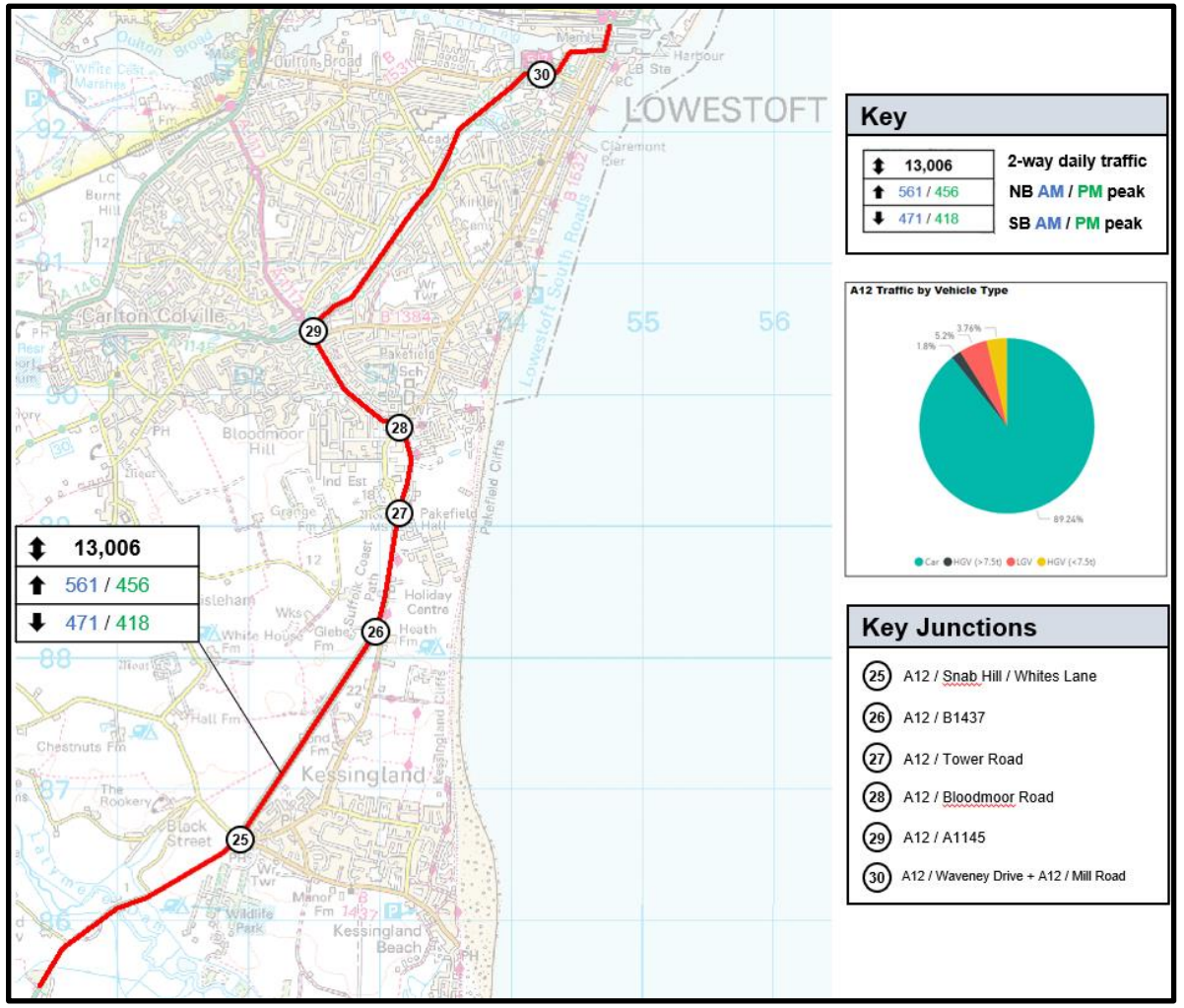
Figure 12. **Study Route Section 3C: Benacre Road Staggered Crossroads to the Bascule Bridge (A47)**

Figure 11.1: Assessed Route	Figure 11.2: Capacity & Capability
	
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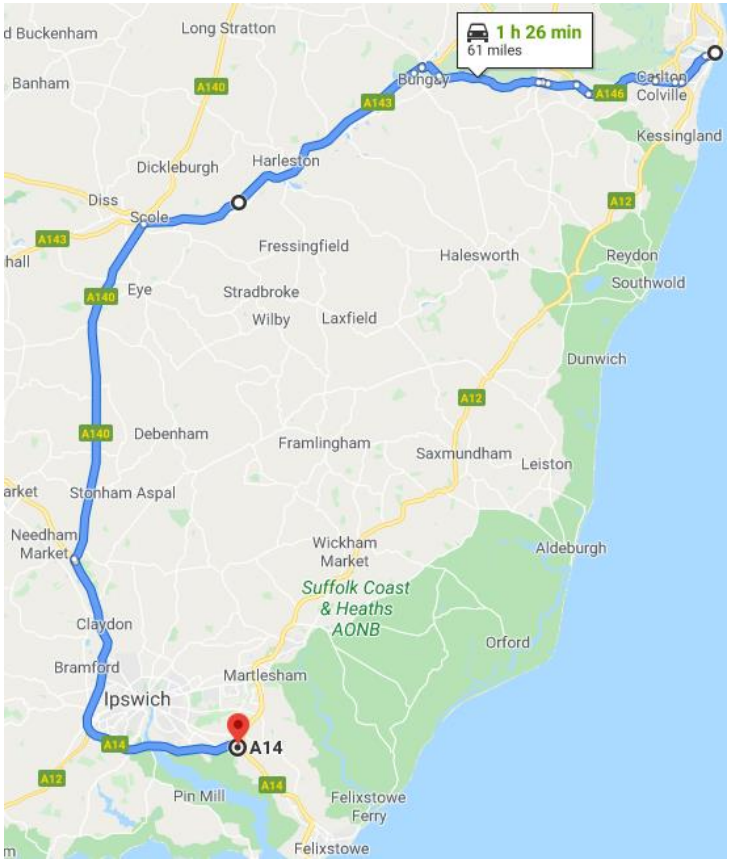
24. The above figures demonstrate the dependency the region has on the A12 as a key transport corridor and in particular for freight movements.
25. Of note is the way the traffic reduces northwards along the route as it joins arterial routes to local communities such as Woodbridge, Framlingham, Aldeburgh, Southwold and Halesworth demonstrating the A12 as key importance as a link to Ipswich and beyond.
26. The background data indicates the above average local reliance on private motorcars in the absence of rail connections in many towns and the wide spacing of communities reducing the commercial attractiveness of bus routes. The study route is subject to a number of congestion issues at various locations leading to delays and journey time unreliability.
27. There are a variety of causes of congestion, such as:
28. High traffic demand, in particular at the section between Ipswich and Melton (from the 'Seven Hills' roundabout at the A14 to the A1152 roundabout junction at Melton);
29. The presence of a high number of at-grade junctions and roundabouts causing queuing back onto the main road, such as at the Foxhall Road, Adastral Park and Bloodmoor Road roundabouts; and
30. Pinch points such as the Farnham Bend, or where dualling merges to single lane carriageway (for example between the B1438 roundabout and the B1079 roundabout at Woodbridge), or at locations where the route passes through communities resulting in slower vehicle speeds due to the increased number of accesses, local junctions and subsequent turning movements.
31. The aforementioned contributary factors impact upon journey time reliability, traffic flows and speeds resulting in reduced performance and operation of the study route.

Current Asset Condition and Resilience

32. There are a number of environmental and social economic factors that affect the resilience of the A12, including:
33. Tidal flooding at Blythburgh and in the longer term at Latymere Dam;
34. Surface water flooding at Yoxford;
35. Severe winter weather particularly between Wickham Market and Kessingland where the road is susceptible to drifting snow;
36. Seasonal fluctuations in traffic due to tourism and events (e.g. Latitude and Aldeburgh Festival);
37. Agricultural traffic; and
38. Abnormal loads such as transformers, pylons, blades for wind turbines, boats and mobile homes for tourism sites.

39. The A12 has an asphalt road surface except for the Kessingland Bypass which is continuously reinforced concrete construction for its entire length. High-friction surfacing is present on the main road and on the approaches to side road junctions, which has been installed as road safety highway improvement schemes. The road surface and road signs along the route appear to be serviceable and, in the main, in good condition.
40. As part of the major road network for Suffolk, there is a programme of on-going works to maintain the condition of the road surface of the A12. Consequently, the road surface generally attains the requisite skidding resistance for the volume of commercial vehicles that currently use it, and all road markings on sections of the study route are in suitable condition.
41. There may be challenges to implementing maintenance works due to a lack of suitable diversion routes and the increasing volume of traffic using the A12. This may require night-time working even for cyclic operations such as grass cutting and gully cleaning currently undertaken in the daytime off-peak (0900-1530).
42. The alternative road routes also lead to poor resilience and exacerbate dependency on A12 operations as outlined at Figure 4 below.

Figure 13. **Alternative Route to A12**



Map data ©2019 Google

43. The above Google route map evidences the alternative major road route between Ipswich and Lowestoft and demonstrates the significance of a diversion away from the A12 - at over 20 miles longer for a point to point by comparison.
44. Sections within the study route are subject to greater pressures by lack of suitable alternative road routes – where available, alternative road routes are comprised of an intricate network of 'B', 'C' and 'Unclassified' roads - further reinforcing the dependency on the A12 as a key transport corridor for the region.
45. In addition, an essential facet of a resilient road network is the ability to effectively divert traffic away from closed carriageways in the event of both planned and unplanned incidents. However, there is little alternative to the A12 as evidenced in Figure 4, and the provision of diversion routes is limited by the suitability of the adjoining network, in particular, for HGV traffic.
46. An example is the A1094, the sole A class road link to Aldeburgh. The diversion route in the event of closure is either via the A1152 / B1069 from Melton to Snape or the B1122 / B1069 from Yoxford via Leiston. Both routes are of considerable length using evolved B roads, often narrow and with substandard junctions and bends. Many B class roads such as the B1078 between Campsea Ash and Tunstall are clearly not suitable for anything other than local traffic.
47. Furthermore, the availability of these routes due to events on the local road network may further intensify these constraints.

Key Junctions, Issues and Constraints

48. A total of 30 key junctions have been identified along the study route as depicted in the above 'Capacity and Capability' figures. There are a number of roundabouts located in the vicinity of the urban areas of Ipswich and Lowestoft. Across the remainder of the study route the key junctions are a mix of at-grade priority junctions, staggered crossroads and on-/off-slips offering connectivity to/from other urban areas, tourist attractions and arterial routes across Suffolk and beyond.
    a. The high proportion of at-grade junctions, side road accesses and on- and off-slips often experience delays and queuing, particularly at peak times. The route is further constrained by the following:
    b. Long, unreliable journeys and congestion pinch points;
    c. Community severance;
    d. Air Quality Management Area (AQMA) at Stratford St Andrew;
    e. High traffic flows on summer Fridays, weekends associated with tourism and traffic associated with the Latitude Festival (taking place once a year in July);
    f. Unpredictable impacts of seasonal agricultural and tourism traffic.

Figure 14. **'Dual Carriageway Merges to Single Lane as On-Slip joins A12'**

Figure 15. **'Pinch Point example' – Farnham Bends**

49. Safety issues across the study route are caused by a number of factors, including:
    a. Numerous at-grade priority junctions and staggered crossroads;
    b. Poor alignment and visibility;
    c. Junction and layby design; and
    d. A lack of facilities for non-motorised users.

Figure 16. **'Issues of road safety of at-grade junctions, such as the A12 / A1094'**

Collision Analysis

Figure 17. 'A12 Seven Hills to Lowestoft Accidents Map (2014-18)'

50. Road Traffic Collision (RTC) data has been reviewed for the 5-year period 2014-18 evidencing a total of 285 reported accidents along the study route involving 439 casualties, of which 4 were fatalities, 45 resulted in serious injury and 390 resulted in injuries recorded as slight in severity.
51. Table 6 below indicates the number of collisions along the entire route showed a dramatic increase from year 2014 to 2015, subsequently there has been a gradual decrease in the total number of accidents. Table 7 shows the severity of collisions and the year in which they occurred.

Table 6. Total collisions by year – A12 Seven Hills to Lowestoft

YEAR	2014	2015	2016	2017	2018
No. of Collisions	28	61	70	59	42
% Change	-	118%	15%	-16%	-29%

Table 7. Collisions by severity and year - A12 Seven Hills to Lowestoft

SEVERITY	2014	2015	2016	2017	2018
Fatal	0	1	1	1	1
Serious	4	6	11	9	6
Slight	24	54	58	49	35
TOTAL	**28**	**61**	**70**	**59**	**42**

52. 6% (36 out of 567) of the total number of vehicles involved were Goods vehicles compared to the equivalent 5-year average for Suffolk of 2%.

Non-motorised Usage, Public Rights of Way (PRoW) and Severance

53. By and large, there is limited provision for non-motorised users along the study route.
54. Where the A12 bisects more urbanised areas, such as residential settlements, footways are often present accommodating pedestrian movement. However, pedestrian infrastructure where provided is often found in isolation and often on one side of the carriageway. These provisions are generally narrow (below current minimum design guidance of 1.8m width) and without the provision of formalised crossing facilities. This can in part be attributed to the limitations of highway boundary, with buildings in close proximity to the carriageway.
55. There are a number of locations where signed cycle routes cross the A12 with limited provision of infrastructure or segregated cycle facilities. Cyclists are required therefore to cross two or more lanes of high-speed, two-way traffic, often by way of at-grade priority junctions in order to continue along the route.
56. There are a number of PRoW that cross the A12 with little by way of formalised or segregated crossing facility. At these locations it can be considered that the A12 restricts the movement of pedestrians, even when there are no physical barriers such as walls or guard railings present. High traffic levels and speeds along the route compound this, bringing further risks to safety and issues surrounding the undesirability or unsuitability of crossing to the other side of the road at these locations. This barrier, commonly referred to as severance, decreases the connectivity between communities and access to amenities separated by the A12, with potential consequences in terms of social cohesion.

Alternative Road Routes & Public Transport Options:

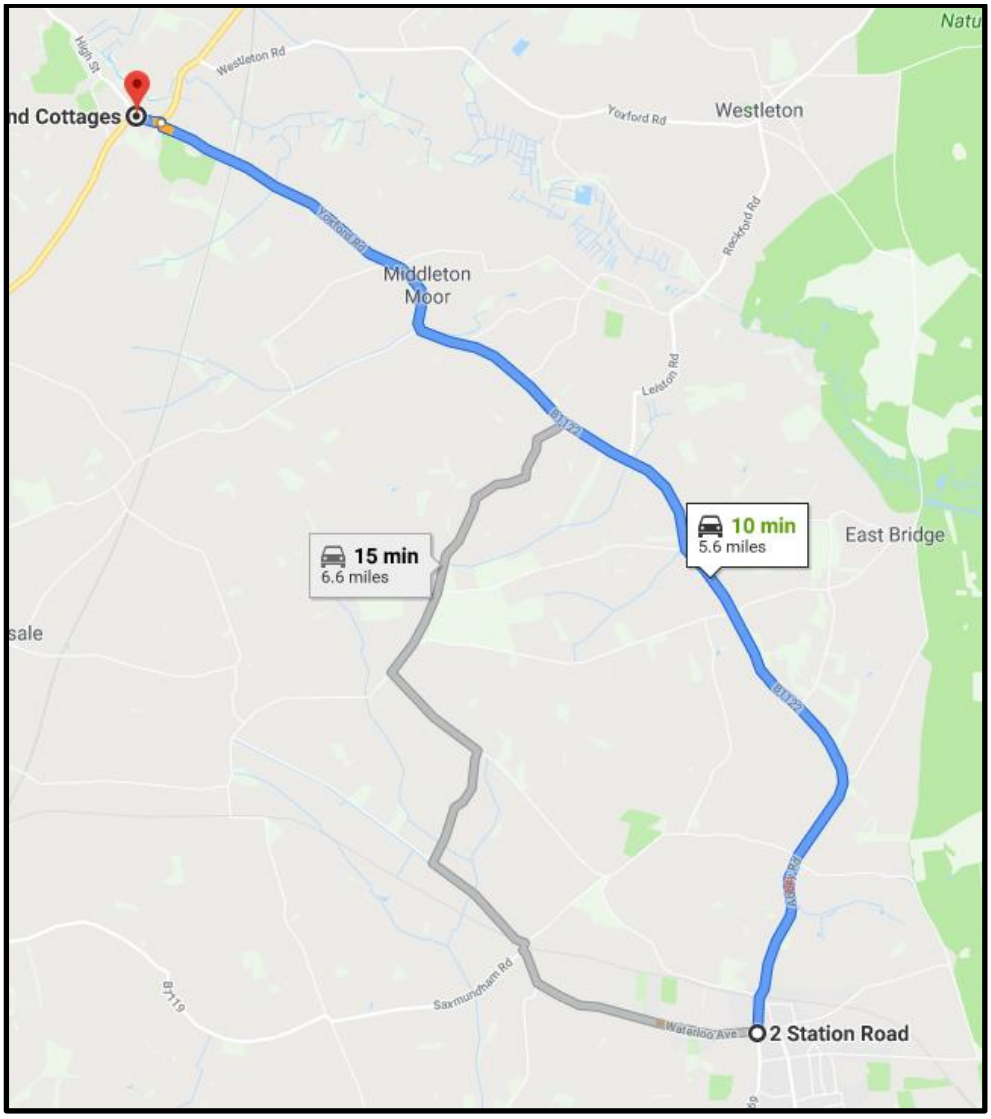
57. There are few alternatives for north-south movements between Lowestoft and Ipswich by road, and where available, routes are either substantially longer and/or of inferior quality, as evidenced by Figure 4. This highlights a significant issue regarding the resilience of the A12 road route as previously discussed.
58. Public transport provisions are also limited. Bus services are infrequent and where available require use of the A12. Therefore, they are exposed to the constraints as discussed above. The East Suffolk rail line operates as a branch line, stopping at almost all intermediate stations between Lowestoft and Ipswich across its schedule. In the absence of a direct or high-speed connection, the East Suffolk rail line offers the only viable public transport alternative to travelling by car, using the A12.

Conclusion

59. The A12 is the major north-south highway and most important transport link in East Suffolk, providing links to the urban centres of Ipswich and Lowestoft and onward connectivity to the A14 and A47, with access to London, the midlands and beyond.
60. It is also the only major access route north and south for commuters and freight companies transporting goods to and from the port of Lowestoft.
61. Major lengths of the A12 have evolved from historic routes without improvement to the alignment or to junction layouts to comply with current standards.
62. Consequently, there is a lack of resilience to the route resulting in further traffic issues in the absence of viable alternatives, constraining users to the A12 with limited options to divert to avoid maintenance, collisions or slow moving local agricultural vehicles.
63. There are also a number of barriers to growth due to stretches of single lane 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.
64. The route also has a strong economic function, with performance issues a potential constraint to economic growth.
65. The constraints as discussed above lead to rising costs for businesses, reducing productivity and ultimately making it less attractive for investment and a barrier to employment for both skilled staff who may be sourced from further afield or those seeking work who are otherwise able/willing to travel.
66. Alongside the A12 corridor, the East Suffolk rail line plays an important role in serving communities, tourism and other businesses in East Suffolk. Solving problems along the A12 are complementary to improving rail connectivity, with both required to enable the region to realise its economic potential.
67. Whilst pedestrians and cyclists tend not to travel long distances along the study route, the proximity of communities and the number of PRoW and signed cycle routes that cross the A12 mean that vulnerable road user movements are an important consideration for the route.

B1122 (Yoxford – Leiston (c.5.6 miles)

Figure 18. 'B1122 Assessed Route'



Map data ©2019 Google

Existing Characteristics and Route Operation

68. The B1122 is a rural 'B' road heading east from Yoxford at its junction with the A12, crossing the East Suffolk rail line at a level crossing before passing through Theberton, reaching Leiston via a second level crossing (at the former Leiston Rail station – now a dedicated freight line to/from the existing Sizewell Power Stations).
69. The study section between Yoxford and Leiston is c.5.6 miles in length and is comprised of single lane carriageway throughout.
70. The route is subject to a number of speed limit changes representative of the nature of the road and its surrounds. There is a short section of 40mph speed limit from its junction with the A12 at Yoxford to a point east of the East Suffolk rail line level crossing where the speed limit becomes derestricted. From here, the remainder of the route

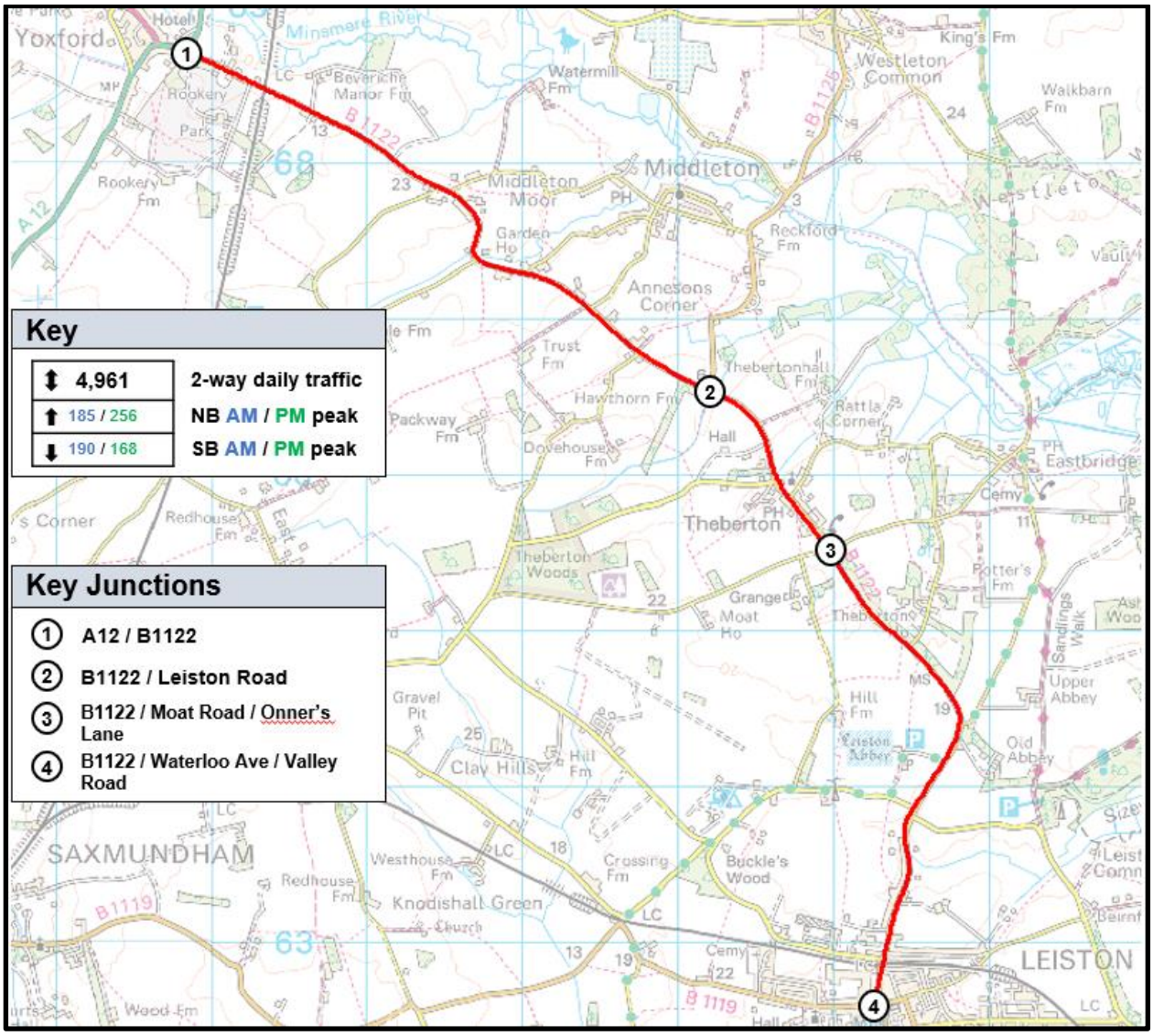
comprises sections of 40mph buffer and 30mph speed limits through the residential settlements of Middleton Moor, Theberton and Leiston, interspersed with sections of derestricted speed limits.

71. From Leiston, the B1122 route then continues east through Aldringham, ultimately terminating at Aldeburgh on the East Suffolk Coast (approximately an additional 3.7 miles).
72. Throughout its length the B1122 is an evolved road albeit with some minor sections of realignment or structural improvement. All the connections to minor roads are priority junctions, many of which do not comply with modern design standards.
73. The adjacent road network comprises a number of minor roads, generally single lane in width. While unsuitable for use as diversion routes experience has shown that where roadworks disrupt the B1122 rat running on these minor routes can become a problem both to local residents and causing damage to the network.

Current Travel Patterns & Route Performance

74. The Suffolk County Transport Model (SCTM) has been used to analyse traffic flows along the study route as evidenced in the below figure. This data is validated for a 2016 base year:

Figure 19. **'B1122 Capacity and Capability'**



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75. Four key junctions have been identified as follows, although there are a number of additional side road and residential accesses along the study route:
    a. A12 / B1122 at-grade priority junction;
    b. B1122 / B1125 at-grade priority junction;
    c. B1122 / Onner's Lane / Moat Road crossroads; and
    d. B1122 / B1069 / Waterloo Avenue (B1119) 4-arm signalised junction.
76. Additionally, further constraints along the study route are depicted in the following images:

Figure 20. **'East Suffolk rail line level crossing on the B1122'**

Map data ©2019 Google

Figure 21. 'Absence of Footway Provision through Middleton Moor'

Map data ©2019 Google

Figure 22. ‘Single-Lane Carriageway with narrow verge

Map data ©2019 Google

Figure 23. **‘B1122 / B1125 Priority Junction’**

Map data ©2019 Google

Figure 24. **'Derestricted Speed Limit through B1122 / Onner's Lane / Moat Road'**

Map data ©2019 Google

Figure 25. **'Level Crossing at Leiston'**

Map data ©2019 Google

Figure 26. **‘4-Arm Signalised Crossroads at Leiston’**

Map data ©2019 Google

77. These constraints have differing impacts and/or affect different road users ranging from issues pertaining to journey time reliability and delays to community severance and social cohesion.

Collision Analysis

Figure 27. **'B1122 Accidents Map (2014-18)'**

Route Summary:

78. Road Traffic Collision (RTC) data has been reviewed for the 5-year period 2014-18 evidencing a total of 21 reported accidents along the study route involving 28 casualties, of which 0 were fatalities, 2 resulted in serious injury and 26 resulted in injuries recorded as slight in severity.
79. Table 8 below indicates the number of collisions along the route has fluctuated dramatically from year to year. Table 9 shows the severity of collisions and the year in which they occurred.

Table 8. Collisions by Year – B1122

YEAR	2014	2015	2016	2017	2018	2019
No. of Collisions	2	6	2	6	1	4
% Change	-	200%	-67%	200%	-83%	300%

Table 9. Collisions by severity and year – B1122

SEVERITY	2014	2015	2016	2017	2018	2019
Fatal	0	0	0	0	0	0
Serious	0	1	1	0	0	0
Slight	2	5	1	6	1	4
TOTAL	**2**	**6**	**2**	**6**	**1**	**4**

80. In summary, the tables show that:
    a. 33% (7 out of 21) collisions occurred on wet/damp/frost/ice road surfaces compared to the equivalent 5-year average for Suffolk of 32%;
    b. 29% (6 out of 21) collisions occurred during the hours of darkness compared to the equivalent 5-year average for Suffolk of 25%;
    c. 8% (3 out of 36) of the total number of vehicles involved in collisions were Goods vehicles compared to the equivalent 5-year average for Suffolk of 2%;
    d. 11% (4 out of 36) of the total number of vehicles involved in collisions were Powered Two Wheelers (P2W) compared to the equivalent 5-year average for Suffolk of 10%; and
    e. 14% (3 out of 21) collisions involved pedal cycles compared to the equivalent 5-year Suffolk average of 10%.

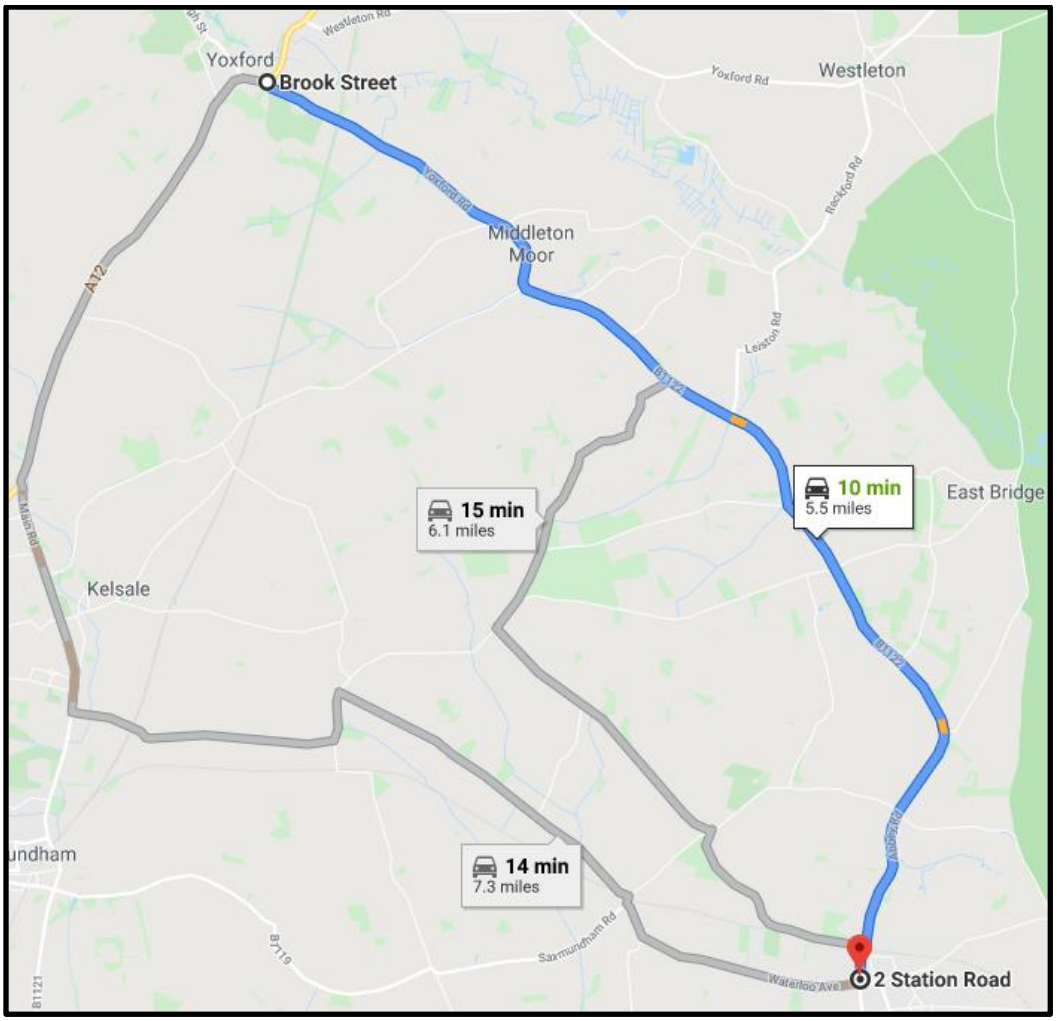
Non-motorised Usage, Public Rights of Way (PRoW) and Severance:

81. There is limited provision for non-motorised users along the study route, with the presence of footways only provided for within the residential settlements of Theberton and Leiston.
82. There is no formal provision of cycle infrastructure along the study route and cyclists using the route are required to cycle on the carriageway.
83. There are a number of PRoW that cross the B1122 within the study area with no provision of formalised crossing facilities or footways connecting to the PRoW network outside of the residential settlements of Theberton and Leiston, and where present, in general those footways that are provided are narrow (below current minimum design standards of 1.8m width) and for the most part only provided to one side of the carriageway.
84. As such, at these locations it may be considered that the B1122 restricts the movement of pedestrians, decreasing the connectivity between communities and access to

amenities separated by the B1122, with potential consequences in terms of social cohesion. Increased traffic levels and speeds would exacerbate these issues and increase the degree of severance along the study route.

Alternative Road Routes & Public Transport Options:

Figure 28. 'B1122 Google Map of Alternative Road Routes and Journey Times'



Map data ©2019 Google

85. There are few alternatives to road movements between Yoxford and Leiston highlighting issues of resilience of the road route. Aside from the A12 major road route, which is significantly longer by journey time, alternative routes where available are not designed to carry high levels of traffic.
86. There is limited public transport provision along the route with bus services between Yoxford and Leiston travelling via Saxmundham and the A12. The East Suffolk rail line operates between the stations of Saxmundham and Darsham in the proximity of the study area but offers limited onward connectivity to the nearby destinations of either

Yoxford or Leiston and consequently there are few alternatives to the B1122 road route.

Conclusion:

87. Many sections of the route need to be brought up to current standards; however, land availability and the associated costs are considered prohibitive for a route of this priority designation (rural ‘B’ road).
88. Given the absence of viable alternative road routes, traffic using the B1122 is further constrained by limited options to divert to avoid maintenance, collisions, localised flooding, or slow moving local agricultural vehicles. In this context, it is noted that the B1122 is the designated HGV route for Sizewell B traffic.
89. Increases in vehicular traffic along the route, with particular reference to HGV and bus movements, will have an adverse effect on non-motorised users as these users are most at risk of severe and fatal injuries by these larger vehicles. This is of particular concern when in the vicinity of sensitive receptors such as residential settlements and areas of identified accident clusters.

Leiston Town

Figure 29. **Leiston Town**

Map data ©2019 Google

Existing Characteristics, Network Operation and Performance:

90. Leiston consists primarily of an intricate network of narrow, single-lane residential streets. Its key north-south corridor follows that of the B1122 (north) and B1069 (south) and its key east-west corridor follows the B1119 (west) or the B1069 (south) with onward connectivity to the East Suffolk Coast. These routes intersect at a 4-arm signalised junction to the north-west of the town centre as depicted in the above map and below image:

Figure 30. **'B1122 / B1069 / B1119 4-Arm Signalised Junction at Leiston'**

Map data ©2019 Google

91. The network is predominantly subject to localised and residential traffic movements and through traffic following the key routes as discussed above to and from tourist destinations along the East Suffolk Coast such as Sizewell Beach, Thorpeness and Aldeburgh. An alternative route for southbound or eastbound traffic is via High Street (B1122), which functions as part of Leiston's retail district and forms part of Leiston's 20mph restricted speed zone with regular road humps ensuring the speed limit is self-enforcing. This section of the B1122 is also prohibited to Goods vehicles over 7.5t (except for loading).

Figure 31. **'High Street (B1122) in Leiston'**

Suffolk County Council Photo

92. As a consequence of reduced speeds and the dual functionality of the route, journey time reliability and speeds for through traffic are impacted. This has potential implications for the resilience of the B1069 north-south corridor running in parallel, which accommodates the majority of these movements.
93. In addition, through movements along High Street are further subject to delay at the 4-arm signalised junction with Sizewell Road and Cross Street as indicated in the below image:

Figure 32. **'High Street (B1122) / Sizewell Road / Cross Street Signalised Junction'**

Map data ©2019 Google

Public Transport Options, Non-motorised Usage and Severance:

94. Leiston has direct bus services to Ipswich, Saxmundham, Aldeburgh, Thorpeness and Halesworth offering a degree of public transport provision and an alternative transport option to the private car. However, there are no passenger rail services serving Leiston with the nearest stations at Saxmundham or Darsham operating on the East Suffolk rail line at c.4.5 and 6 miles from Leiston by road respectively.
95. Provisions for non-motorised users are also limited. Narrow footways (below current minimum design guidance of 1.8m width) are present adjacent to the majority of the road network. However, crossing facilities are limited to key junctions such as those illustrated above, inclusive of within the retail centre of the town.
96. There are no infrastructure provisions or additional facilities for cyclists and cyclists using the route are required to cycle along the carriageway.

Conclusion

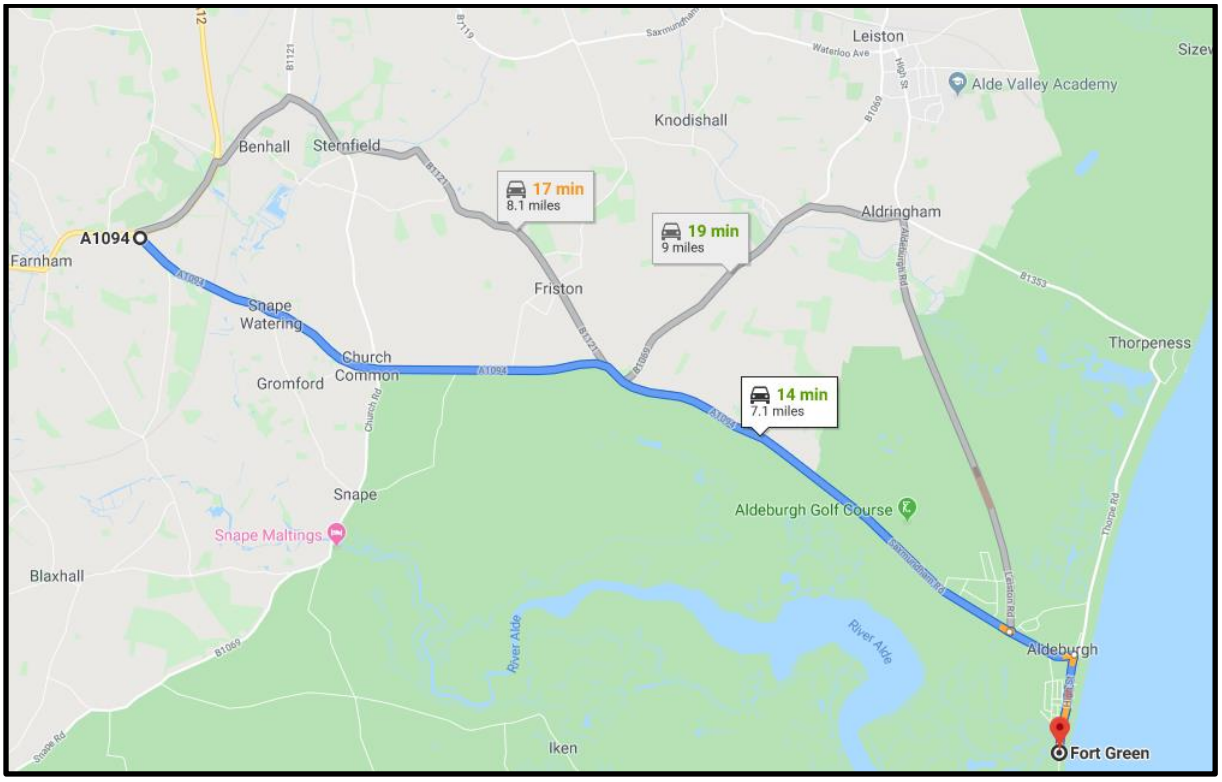
97. The Leiston road network is subject to a mix of residential traffic movements and through movements to and from tourist destinations along the East Suffolk Coast such as Sizewell Beach, Thorpeness and Aldeburgh, and given the limited road space for through traffic along the key north-south corridor in particular (a narrow single-lane B-road) and an absence of viable alternative road routes, traffic using the network is

constrained by limited options to divert to avoid maintenance, collisions, localised flooding, or slow moving vehicles.

98. Increases in vehicular traffic along the route or that dispersed along the B1122 (through the centre of Leiston) will have an adverse effect on non-motorised users which are already subject to issues of severance. This is of particular concern when in the vicinity of sensitive receptors such as along the High Street (B1122), though narrow residential streets, near to schools and in areas of identified accident clusters.

A1094 (East of the A12 to Aldeburgh)

Figure 33. **'A1094 Study Route and Alternative Road Routes and Journey Times'**



Map data ©2019 Google

Existing Characteristics and Route Operation:

99. The A1094 study route runs from its junction with the A12 at Friday Street eastwards to Aldeburgh over a distance of approximately 7 miles and is comprised of single-lane carriageway throughout. It crosses the East Suffolk rail line via a road bridge followed by the River Fromus (at a location prone to flooding) to the east of the A12 before passing Snape and terminating at Aldeburgh on the East Suffolk Coast, serving as the primary road route to and from these destinations.

100. As with most other roads in Suffolk it has evolved over the years rather than being designed and constructed to modern standards. This is reflected by the substandard junction layout at minor road connections, particularly between the A12 and Snape.

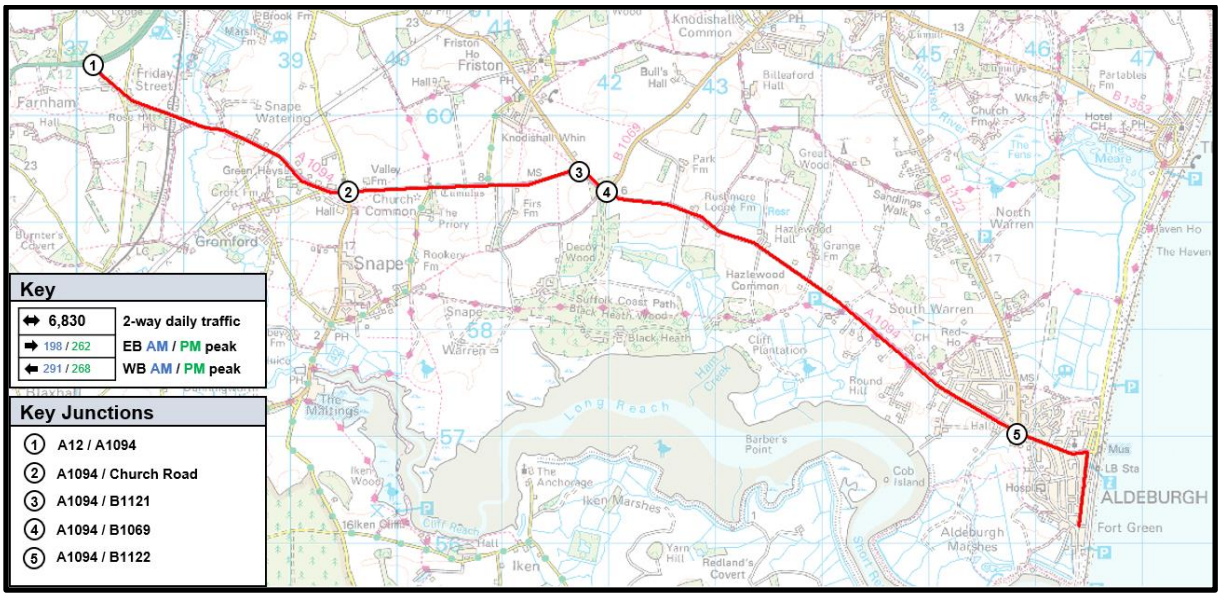
101. Aldeburgh is a significant tourist attraction throughout most of the year. Snape Maltings is also a world-renowned centre of music and the arts. Both attract significant numbers of visitors the vast majority of whom travel by car. Current Travel Patterns & Route Performance:

102. Annual Average Daily Traffic (AADT) and Annual Average Weekday Traffic (AAWT) flows have been assessed for a 5-year period 2014-18 taken from Automated

Traffic Counts (ATCs) stationed along the study route as depicted in the map image below, and with the results as evidenced in the subsequent graphic.

Figure 34. **'A1094 ATC Locations (2014-18)**

Figure 35. **'A1094 Capacity and Capability'**



103. Five key junctions have been identified, although there are a number of additional side roads and residential accesses along the study route:

a. A12 / A1094 priority junction;
b. A1094 / Church Road crossroads;
c. A1094 / B1121 priority junction;
d. A1094 / B1069 priority junction; and
e. A1094 / B1122 roundabout.

104. Additionally, further constraints identified along the study route are depicted in the below images. These constraints have differing impacts and/or affect different road users ranging from issues pertaining to journey time reliability and delays to road safety, community severance and social cohesion.

Figure 36. **'Road Bridge Over East Suffolk Rail Line'**

Map data ©2019 Google

Figure 37. **'Road Bridge Over River Fromus'**

Map data ©2019 Google

Figure 38. **'A1094 / Church Road (B1069) Staggered Crossroads'**

Map data ©2019 Google

Figure 39. **'A1094 / B1121 Priority Give-Way Junction'**

Map data ©2019 Google

Figure 40. **'A1094 / B1069 Priority Give-Way Junction'**

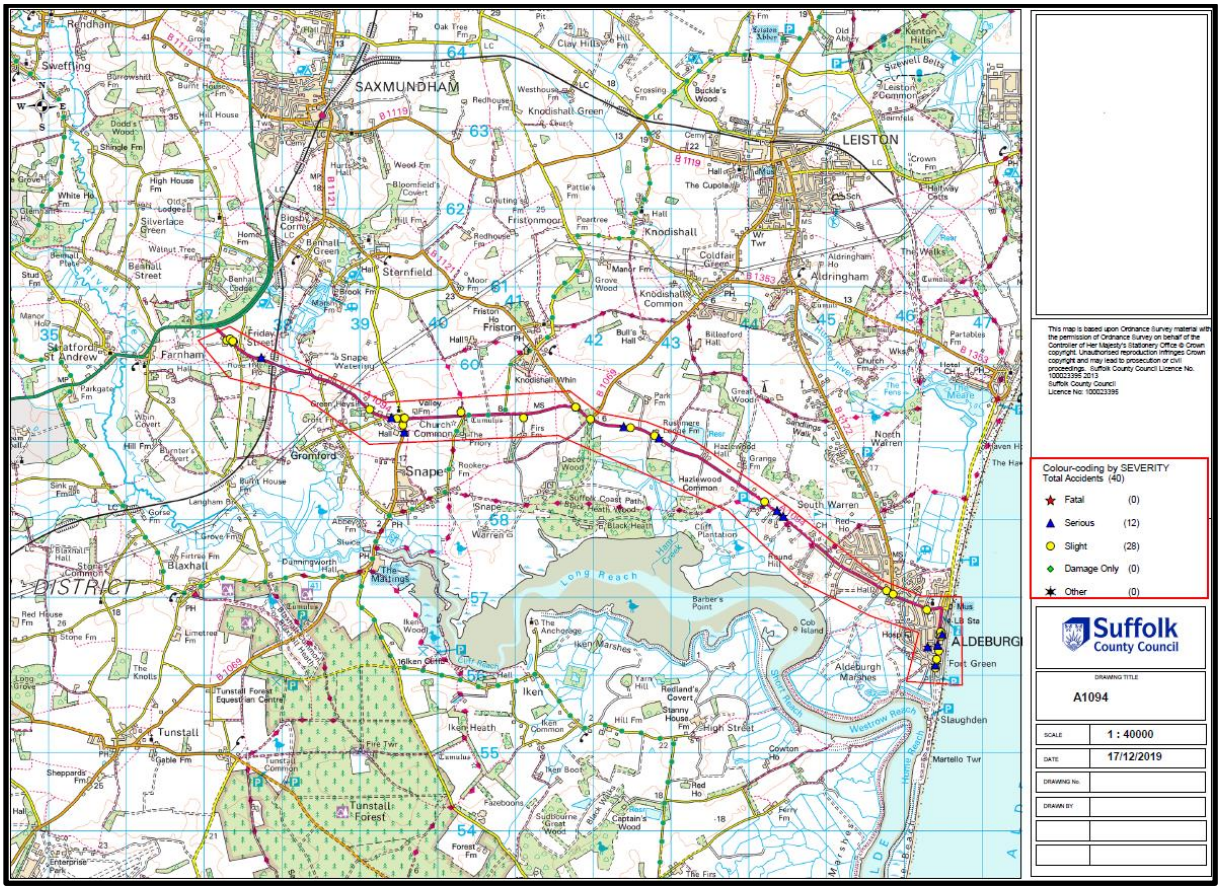
Map data ©2019 Google

Figure 41. **'A1094 / B1122 Roundabout at Aldeburgh'**

Map data ©2019 Google

Collision Analysis

Figure 42. **'A1094 Accidents Map (2014-18)'**



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Route Summary:

105. Road Traffic Collision (RTC) data has been reviewed for the 5-year period 2014-18 evidencing a total of 40 reported accidents along the study route involving 58 casualties, of which 0 were fatalities, 13 resulted in serious injury and 45 resulted in injuries recorded as slight in severity.

106. Table 10 below indicates the number of collisions along the route has been consistently low from year to year with a significant decrease in recorded incidents in 2018. Table 11 shows the severity of collisions and the year in which they occurred.

Table 10. Collision by year

YEAR	2014	2015	2016	2017	2018	2019
No. of Collisions	5	8	8	8	2	9
% Change	-	60%	0%	0%	-75%	350%

Table 11. Collision by severity and year

SEVERITY	2014	2015	2016	2017	2018	2019
Fatal	0	0	0	0	0	0
Serious	0	2	3	1	2	4
Slight	5	6	5	7	0	5
TOTAL	**5**	**8**	**8**	**8**	**2**	**9**

107. The tables show that:

a. 4% (3 out of 76) of the total number of vehicles involved in collisions were goods vehicles compared to the equivalent 5-year average for Suffolk of 2%; and

b. 11% (8 out of 76) of the total number of vehicles involved in collisions were Powered Two Wheelers (P2W) compared to the equivalent 5-year average for Suffolk of 10%.

Non-motorised Usage, Public Rights of Way (PRoW) and Severance:

108. There are limited provisions for non-motorised users along the study route, with the presence of footways only provided for within the residential settlements of Snape and Aldeburgh, and where present, the footways are narrow (below current minimum design standards of 1.8m width) and for the most part only provided for on one side of the carriageway.

109. There are no provisions of cycle infrastructure along the study route and cyclists using the route are required to cycle along the carriageway.

110. There are a number of PRoW that cross the A1094 within the study area with no provision of formalised crossing facilities or footways connecting to the PRoW network. There are no footways present in the verges and no crossing points connecting these public rights of way. Consequently, the A1094 acts as a barrier to the use of these routes by way of severance.

111. As such, at these locations it may be considered that the A1094 restricts the movement of pedestrians, decreasing the connectivity between communities and access to amenities separated by the A1094, with potential consequences in terms of social cohesion. Increased traffic levels and speeds would exacerbate these issues and increase the degree of severance along the study route.

Alternative Road Routes & Public Transport Options:

112. There is limited public transport provision along the route with bus services between Aldeburgh and the A12 corridor travelling via Leiston and Saxmundham along the B1122 and B1119 respectively for both northbound and southbound journeys. The East Suffolk rail line operates between the stations of Ipswich and Lowestoft with the closest station to the study route located at Saxmundham offering limited onward

public transport connectivity to/from settlements along the A1094 corridor. Consequently, there is limited alternative to the A1094 road route.

Conclusion

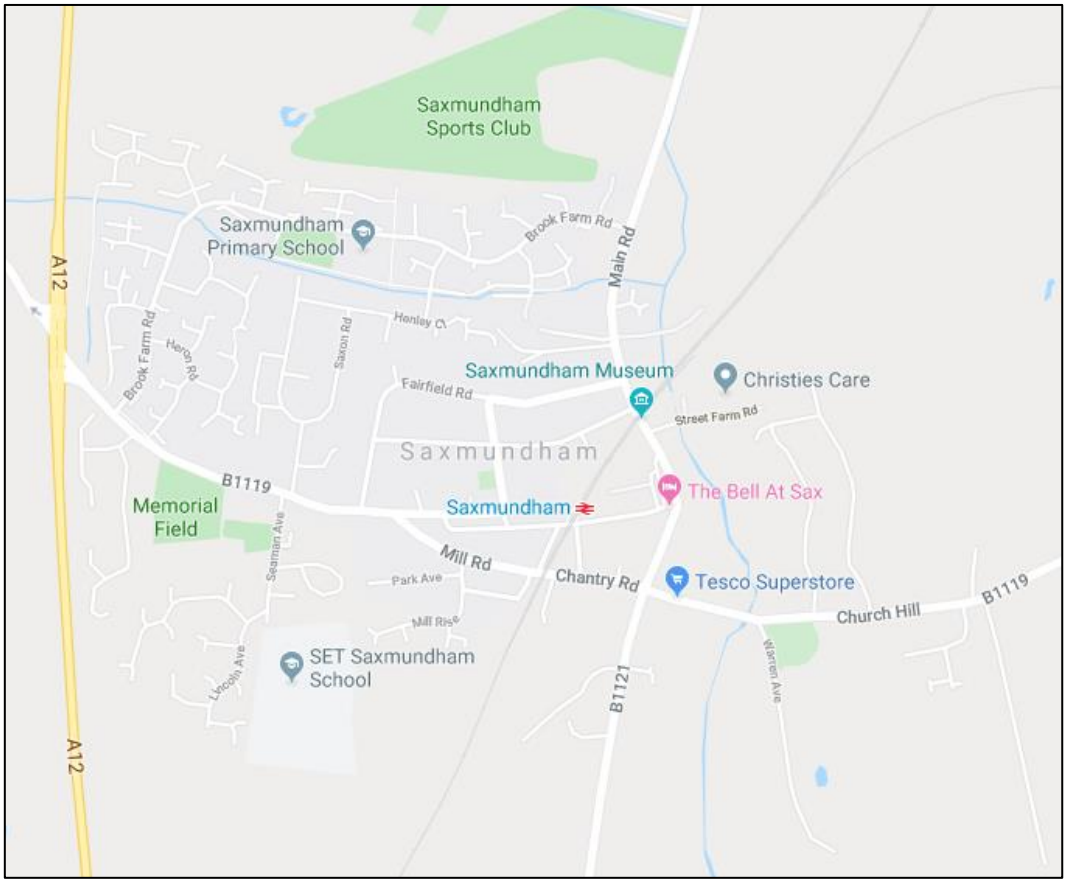
113. Many sections of the route are below current design standards and, where land availability and the associated costs are considered prohibitive.

114. Given the absence of viable alternative road routes, traffic using the A1094 is further constrained by limited options to divert to avoid maintenance, collisions, localised flooding, or slow moving local agricultural vehicles.

115. Increases in vehicular traffic along the route, with particular reference to HGV and bus movements, will have an adverse effect on non-motorised users. This is of particular concern when in the vicinity of sensitive receptors such as residential settlements and areas of identified accident clusters such as at the Friday Street junction with the A12.

Saxmundham

Figure 43. **Saxmundham**



Map data ©2019 Google

Existing Characteristics, Network Operation and Performance:

116. Saxmundham consists primarily of an intricate network of narrow, single lane residential streets. Its key north-south corridor follows that of the A12 to the west of the town. This section of the A12 is single lane carriageway and subject to congestion and delays particularly at the staggered crossroads junction of the B1119. An alternative north-south road route (that would otherwise bypass this section of the A12) is provided via the B1121 to the east of the town. However, this is of inferior quality to support resilience of the A12 given the high traffic volumes using the route. Its key east-west corridor follows that of the B1119 with onward connectivity to Framlingham and the A1120 to the west and Leiston and tourist destinations along the East Suffolk Coast, such as Sizewell Beach, Thorpeness and Aldeburgh to the east. The B1119 east from its junction with the A12 is prohibited to Goods vehicles over 7.5t (except for loading).

117. Of particular note is the presence of two moderately sized supermarkets in the centre of Saxmundham. This is a significant local trip attractor as the nearest similar sized stores are in Woodbridge, Framlingham, Halesworth or Lowestoft

Figure 44. **'A12 / B1119 Staggered Crossroads'**

Map data ©2019 Google

118. The network is predominantly subject to localised and residential traffic movements, with through-traffic primarily following the A12 bypass. However, through-traffic following the east-west corridor of the B1119 is subject to the following constraints:

Figure 45. **'Level Crossing at Mill Road, Saxmundham'**

Suffolk County Council Photo

Figure 46. **'Level Crossing at Saxmundham Rail Station'**

Suffolk County Council Photo

Figure 47. **'Rail Bridge Crossing the B1121'**

Map data ©2019 Google

Figure 48. **‘B1121 / B1119 Signalised Crossroads, Saxmundham**

Map data ©2019 Google

Figure 49. **‘Narrow single-lane carriageway**

Suffolk County Council Photo

Public Transport Options, Non-motorised Usage, Rights of Way and Severance:

119. Saxmundham has rail links to Ipswich and Lowestoft via the East Suffolk rail line, with onward connections to London (via Ipswich) and Norwich (via Lowestoft). It also has direct bus services to Aldeburgh, Dallinghoo, Ipswich, Leiston, Sibton and Walberswick offering a degree of public transport provision and an alternative transport option to the private car. However, in the main, these services are infrequent or are significantly longer in journey time than the equivalent road route by private car.

120. Provisions for non-motorised users are somewhat limited. Footways are provided for in the main through the network of residential streets and adjacent to the B1119 east-west corridor. However, these footways are narrow in width (below current minimum design standards of 1.8m width) and there is an absence of crossing points aside from at signalised junctions.

121. There are no infrastructure provisions or additional facilities for cyclists and cyclists using the network are required to cycle along the carriageways.

Conclusion

122. The Saxmundham road network is predominantly subject to localised and residential traffic movements, with through movements to and from tourist destinations along the East Suffolk Coast or westwards toward Framlingham and the A1120. Given the limitations of road space for through traffic along either the north-south corridor of the B1121 or the east-west corridor of the B1119, and the absence of viable alternative road routes, traffic using the network is constrained by limited options to divert to avoid maintenance, collisions, or slow-moving vehicles. This puts additional pressure on the residential road network, constrained further by on-street parking and two level crossings.

123. Increases in vehicular traffic across this network or that dispersed from the A12 (through the centre of Saxmundham) will have an adverse effect on non-motorised users which are already subject to issues of severance through limited infrastructure. This is of particular concern when in the vicinity of sensitive receptors such as through the retail areas (B1121 and B1119), narrow residential streets, near to schools and in areas of identified accident clusters.

PART II: Rail infrastructure

1. Summary

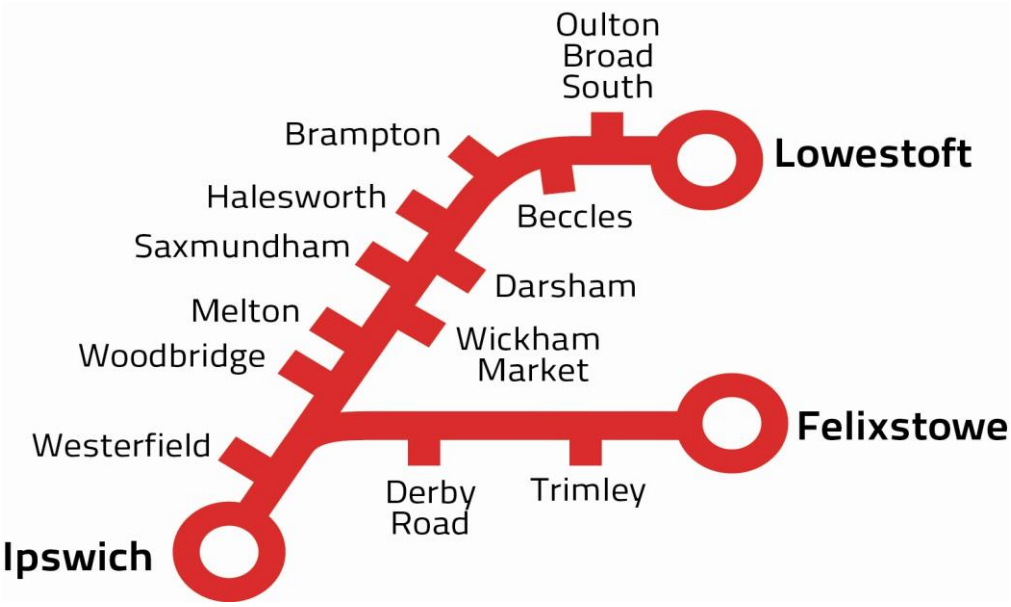
124. This document examines the current status of rail services in the Sizewell area, the nature of the infrastructure and the associated constraints. It lists the destinations of the trains and station facilities are described.

125. This document is designed to present an indication of the existing infrastructure only and should not be considered a comprehensive audit.

126. In Suffolk, the railway plays an important role in providing low-carbon transport for the movement of goods and people. It provides a vital link to a variety of destinations, and serves demand for commuter, leisure and long-distance trips.

2. East Suffolk Line

Figure 50. **East Suffolk Line**



Overview

127. The East Suffolk Line (ESL) is the railway line that provides local connectivity to 10 villages between Ipswich and Lowestoft and 2 villages between Ipswich and Felixstowe. It is the main railway line that connects the Sizewell site with the rest of the national rail network via Ipswich.

128. The ESK is a non-electrified line that also plays a significant role in connecting the UK to a global economy. The line forms part of the nationally important Strategic Rail Freight Network for freight services travelling from the UK's busiest container port,

the Port of Felixstowe, to the Midlands, North and Scotland, and to the Southwest of England via London.

129. It also provides vital rail links for passengers travelling from East Suffolk to other key economic centres such as Ipswich, Cambridge, Norwich, Essex and London. The line intersects at Westerfield, where passenger trains travel north from Ipswich to Lowestoft (calling at 12 stations) or east towards Felixstowe (calling at 4 stations). Both services are approximately hourly.

130. Demand on the East Suffolk Line is growing for freight and passenger rail services. Prior to the pandemic, passenger footfall at stations on the East Suffolk Line over a three-year period had increased by approximately 3%. Since the introduction of an hourly passenger rail service, which became operational in 2013 after the delivery of the Beccles Loop, passenger demand rose by 12% over a six-month period. There is an aspiration for a half-hourly faster passenger rail service between Lowestoft and Ipswich and between Felixstowe and Ipswich. Demand for these services is likely to grow further with the introduction of 3,500 homes at the Ipswich Garden Suburb and from the commitment made in East Suffolk Council's 2020 Local Plan for the Suffolk Coastal area to deliver 10,476 new homes by 2036.

131. Network Rail's 2016 Anglia Route Study (**APPENDIX 2:5** of the LIR) sets out the ambition for rail routes across the Suffolk rail network. It is recognised that there is a need for two trains per hour between Lowestoft and Ipswich, however, to achieve this, additional track is needed between Woodbridge and Saxmundham. The Anglia Route Study indicated that a half-hourly passenger service between Lowestoft and Ipswich would require double tracking south of Wickham Market, south of Saxmundham, north of Halesworth, midway between Brompton and Beccles and south of Oulton Broad South. Additionally, more platform capacity is required at Ipswich Station. Network Rail claim in the Anglia Route Study that such infrastructure would 'interact with any rail projects to support the construction of Sizewell'.

Travel Modes

132. The 2011 Census travel to work data provides an overview of the modes used to travel to/from work. Sizewell is located in East Suffolk (formerly in the Suffolk Coastal district). Car and van usage is higher than the national average and bus use is lower. The use of rail is consistent with demand across the rest of the region.

Table 12. Travel to Work Mode Dataset taken from Source: Census 2011

Mode of Travel to	Suffolk Coastal	Ipswich	Waveney	New Anglia	England
Work from home	14%	7%	10%	12%	10%
Train, underground	2%	2%	1%	2%	9%
Bus, minibus 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%

Rail Station Usage

133. The rail station usage for stations along the East Suffolk Line for 2018-19 and 2019-20 shows that over 1.2m people in East Suffolk use the railway for their journeys. The 2019-20 period shows a reduction due to COVID. However, it is anticipated that post pandemic demand will grow, especially with increased housing development, as previously mentioned.

Table 13. Station Usage Table 2018-19 to 2019-20

Station	2018-19 TOTAL ENTRIES AND EXISTS	2019-20 TOTAL ENTRIES AND EXISTS	% Change
Lowestoft	438,476	406,440	-7.3%
Oulton Broad South	47,696	43,518	-8.8%
Beccles	114,302	110,152	-3.6%
Brampton	9,532	9,858	3.4%
Halesworth	102,016	99,838	-2.1%
Darsham	59,924	61,534	2.7%
Saxmundham	164,400	165,274	0.5%
Wickham Market	50,932	55,266	8.5%
Melton (Suffolk)	84,358	82,562	-2.1%
Woodbridge	210,440	209,172	-0.6%
Westerfield	11,642	11,284	-3.1%
Total	**1,293,718**	**1,254,898**	**- 3.09%**

Saxmundham and Darsham Station

134. Saxmundham and Darsham Stations are the two stations in closest proximity to the Sizewell C site.

135. Both stations provide access to the hourly passenger rail service between Ipswich and Lowestoft, which is operated by Greater Anglia Trains. Details of the services have been set out below:

Table 14. Approximate Rail Station Service Frequencies.

Station (Origin)	To Ipswich	To Lowestoft	To Woodbridge	To Beccles
Saxmundham	40 minutes	49 minutes	22 minutes	31 minutes
Darsham	47 minutes	43 minutes	29 minutes	25 minutes

136. Passenger rail services travelling south from Saxmundham and Darsham terminate at Ipswich Station, where there is an opportunity for passengers to connect with services travelling across Suffolk to Cambridge and Norwich or to London via Essex.

Saxmundham Station

137. Saxmundham is located between Wickham Market and Darsham. The station has two platforms and is accessed directly from Station Approach on the B1121. The car park at the Station provides space for 18 vehicles and 10 bicycles. The station building, which is currently undergoing reconstruction due to a fire in 2018, has two platforms. Access between the platforms can be gained by crossing the level crossing on Station Approach. The station is unmanned, but includes ticketing facilities and a customer help point.

138. Figures 42 and 43 below show the current 10 and 20-minute cycle and driving catchment for Saxmundham Railway station.

Figure 51. **Saxmundham Station 10- and 20-Minute Cycle Catchment**

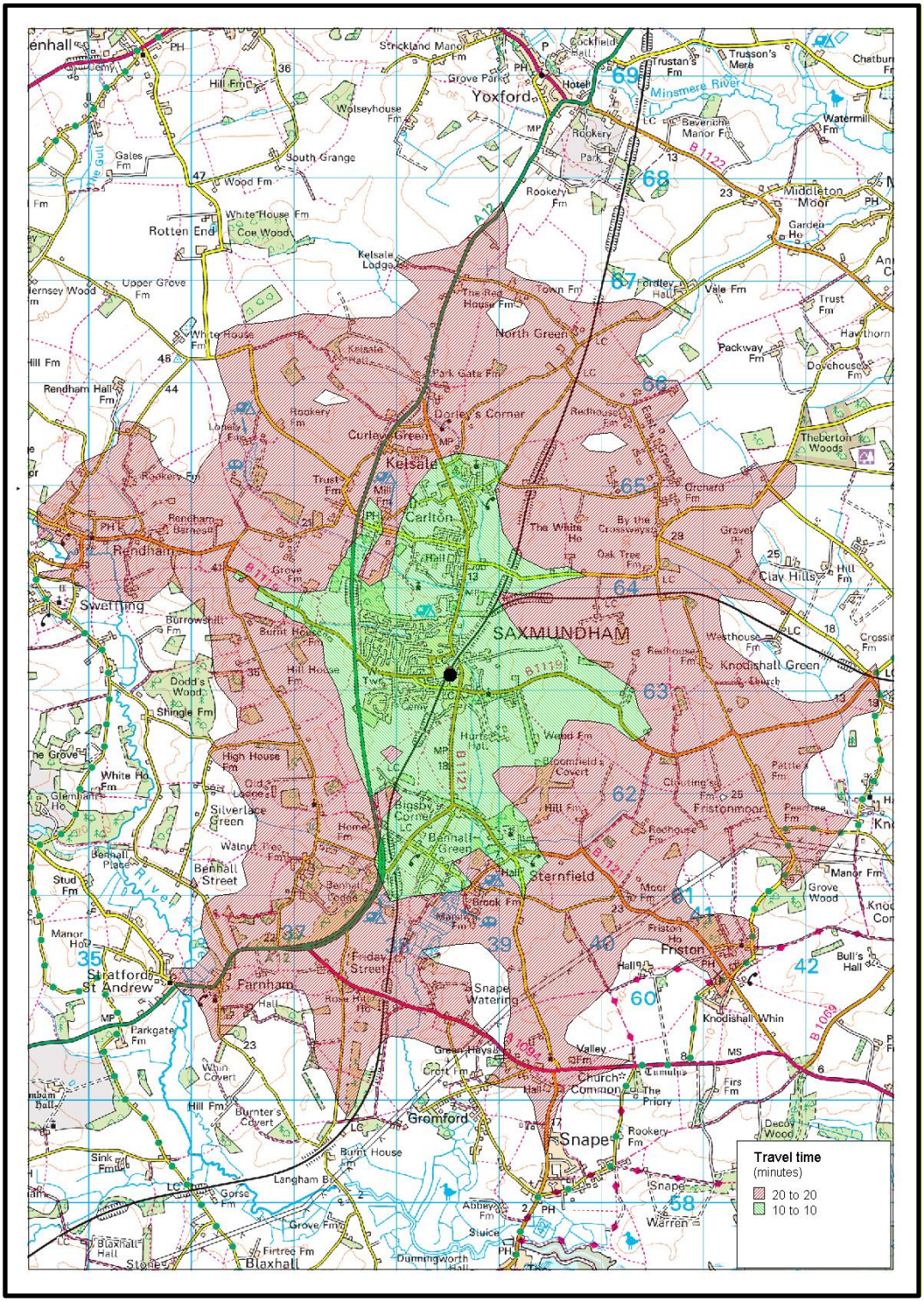
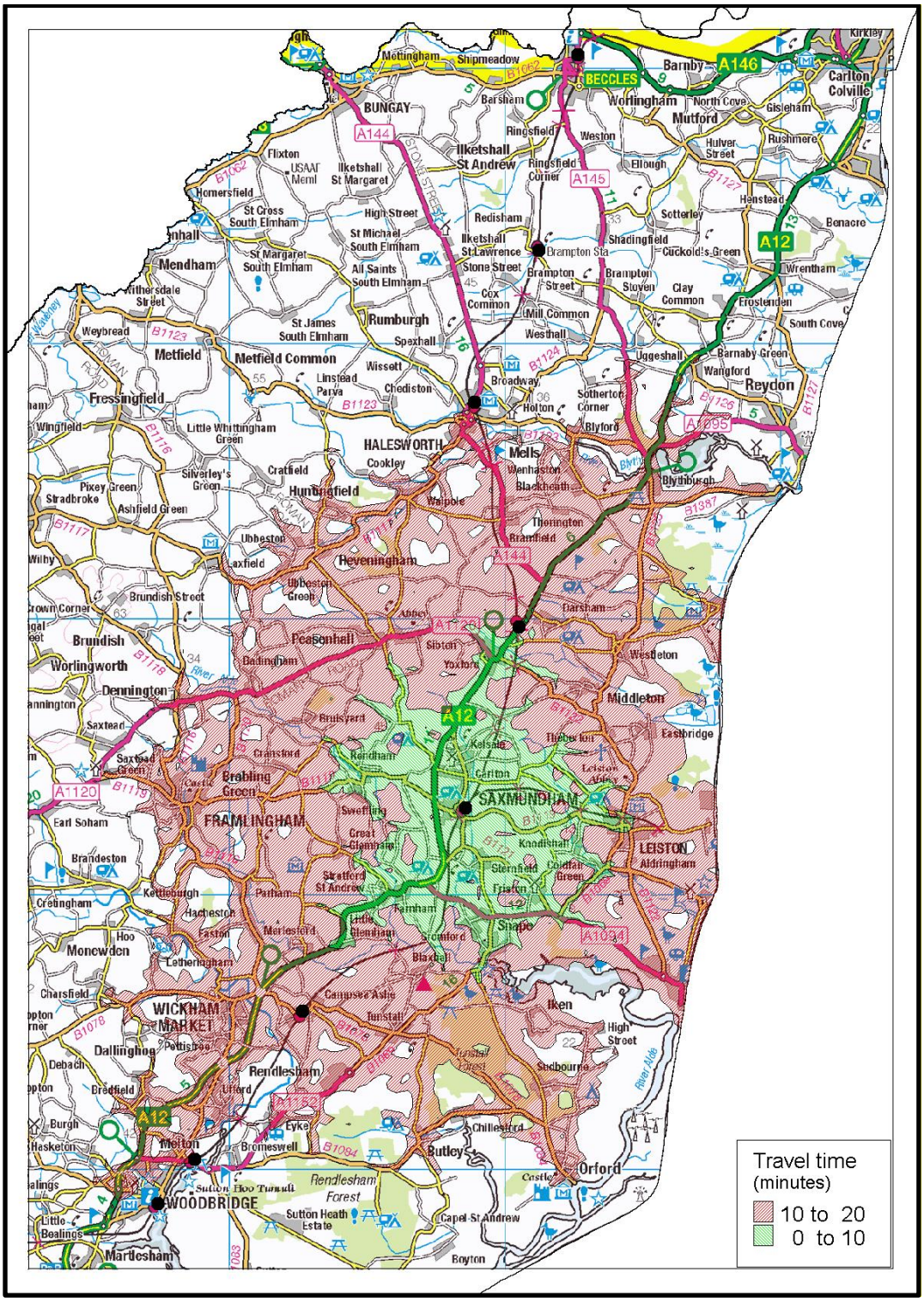


Figure 52. **Saxmundham Station 10- and 20-Minute Drive Catchment**



Darsham Station

Figure 53. **Darsham Station**

Suffolk County Council Photo

139. Darsham Railway Station is an unmanned station which consists of two platforms. The station is accessed from the A12, which also separates the station from the station car parking area. The car park provides space for 25 vehicles and 4 bicycles. Access between the two platforms is gained by crossing the level crossing on Main Road. The station includes ticketing facilities and a customer help point.

140. Figures 45 and 46 below show the current 10 and 20-minute cycle and driving catchment for Darsham Railway Station.

Figure 54. **Darsham Station 10- and 20-Minute Cycle Catchment**

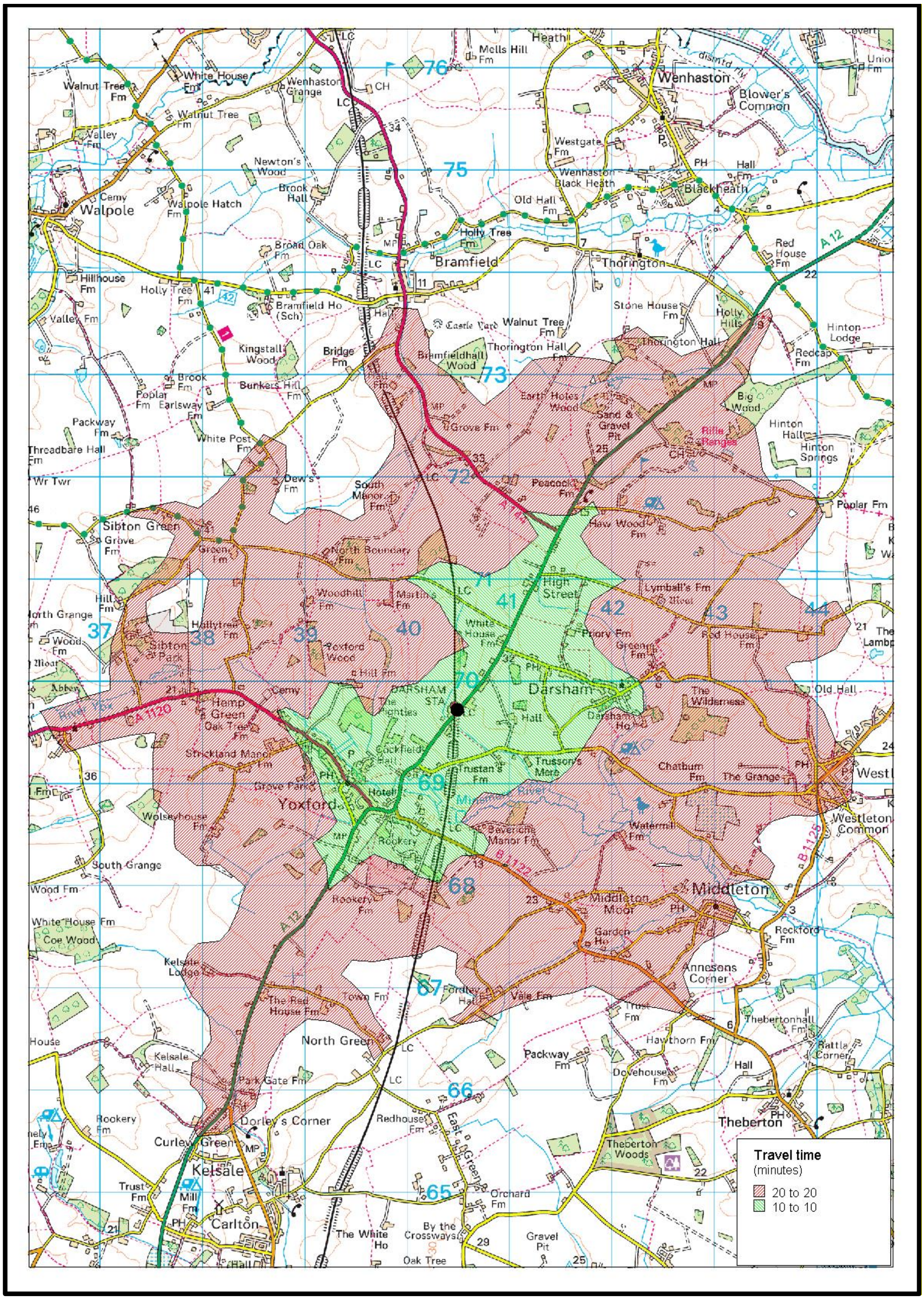


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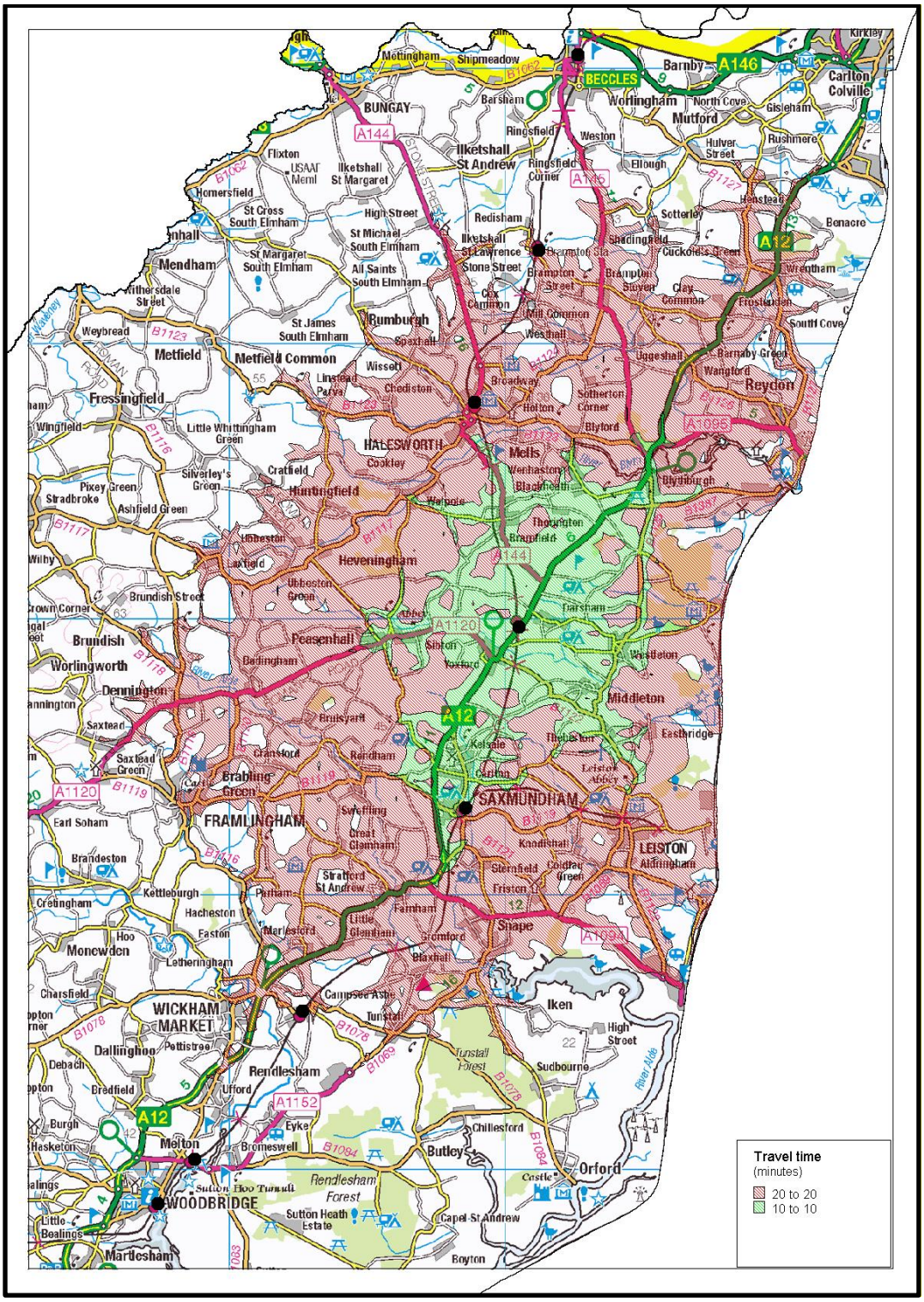
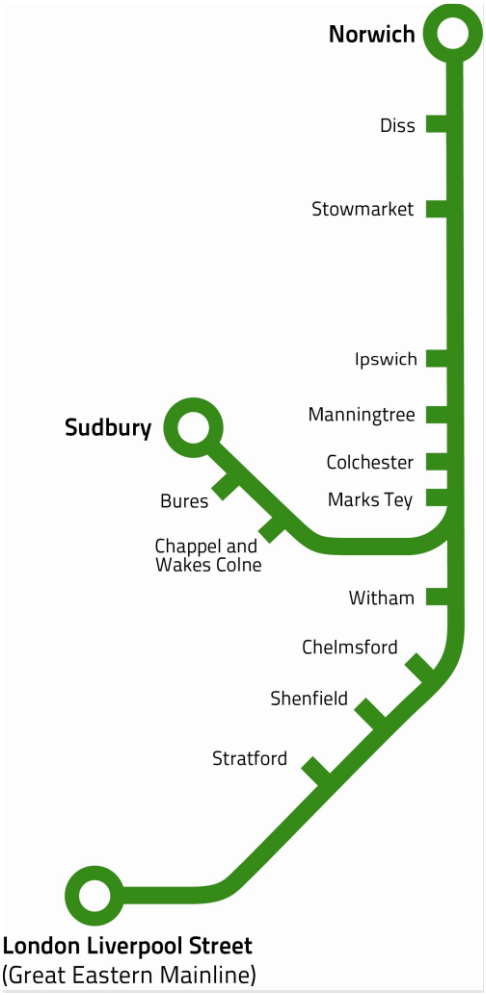
Figure 55. **Darsham Station 10- and 20-Minute Drive Catchment**



3. Other key rail routes

Great Eastern Main Line

Figure 56. **Great Eastern Main Line**



141. The Great Eastern Main Line (GEML) is an electrified line that operates from Norwich, via Stowmarket and Ipswich to Essex and London Liverpool Street. It provides a rail link for passenger and freight rail services into London. In the peak, 22 trains per hour in both directions operate along the GEML. The GEML also provides a rail link for 50 freight trains in both directions. The line operates at capacity, and current constraints on the line mean that there is no capacity for extra passenger or freight services (Network Rail: Great Eastern Main Line Study p4, 6 and 14, **APPENDIX I TO ANNEX C**). Freight services running across London to the Midlands and to the southwest of England are also constrained by capacity on the North London Line.

142. Network Rail estimates that passenger growth of 2% per annum will be achieved between 2019 and 2025 (a total of 14% increase in demand). By 2040 passenger demand is predicted to grow by 47%. As part of the campaign to improve the speed and frequency of services travelling from Norwich, Ipswich and Essex, a

total of five additional services will be operating across the network during the peak by 2043 (Network Rail: Great Eastern Main Line Study p 6 – **APPENDIX I TO ANNEX C**).

143. The GEML Taskforce is developing a Strategic Outline Business Case to make the case for investment in the GEML. Such investment is likely to include:

144. A passing loop at Beaulieu Park (a new station north of Chelmsford);

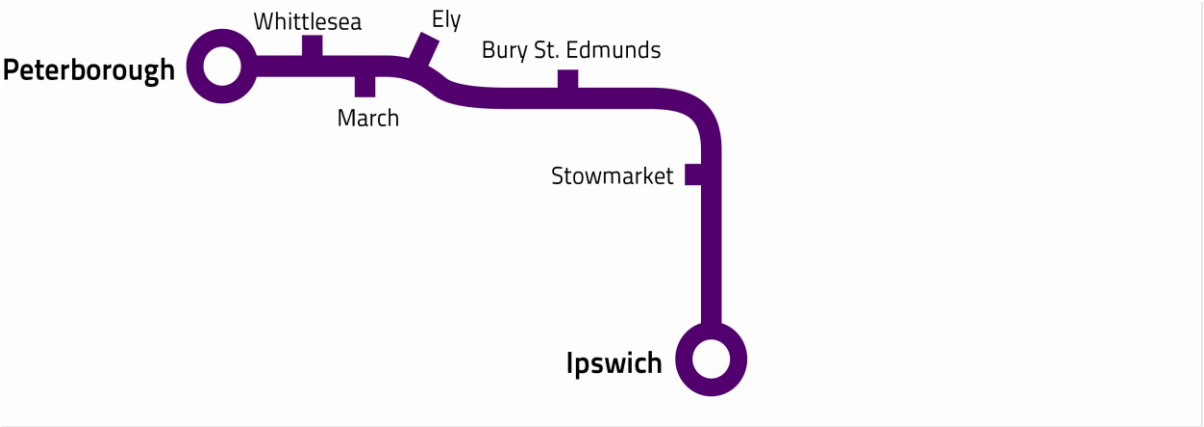
145. Upgrading 30 miles of signalling between Colchester and Shenfield to reduce current 3-minute headways and increase line-speeds to 110 MPH;

146. Upgrade of level crossings north of Colchester;

147. Doubling the single line from Bow Junction to connect with the existing electric lines located outside of London Liverpool Street Station – providing passing provision for slower services.

Cross-Country Route

Figure 57. **Cross-County route**



148. The Cross-Country Route through Ely to Peterborough forms part of the Strategic Freight Network that runs from the Port of Felixstowe to the Midlands and the North of England. The line is partially electrified from Ipswich to Haughley junction.

149. The route provides a vital rail link for freight services from the Port of Felixstowe and passenger services travelling from Ipswich. The route passes through Ely which acts as a key interchange for multiple services travelling from Cambridge, Suffolk and Norfolk.

150. Studies undertaken by Network Rail predict that passenger growth on the corridor from Ipswich to Peterborough will grow by 2.6% per annum between 2018 and 2035. In 2016, Greater Anglia made a franchise commitment, endorsed by the Department for Transport to deliver an hourly passenger rail service between Ipswich and Peterborough to commence by October 2019, however, lack of capacity at Ely has prevented its delivery.

151. Capacity at Ely and on single-tracked rail routes (such as Soham to Ely) also prevents further passenger and freight services travelling from Suffolk. Ely, in particular, acts as a blocker to any further services passing through the station area. It currently operates at capacity during the day, with all 8.5 train paths being utilised, and under capacity during the night with 6.5 train paths being utilised.

152. Network Rail is working with a group of local authority representatives from Suffolk, Norfolk and Cambridgeshire, New Anglia Local Enterprise Partnership and Cambridgeshire and Peterborough Combined Authority to address constraints at Ely.

153. The financial cost of addressing Ely is significant and not anticipated to be completed until CP7 (2024 – 2029). It is likely to include:

154. Double tracking of the single junction at Haughley (Network Rail are currently developing a business case for this);

155. A road intervention to overcome two level crossing problems to the north of Ely;

156. Track realignment through Ely Station and to the north of Ely to separate the single line that feeds two lines, the line to Kings Lynn and the line to Norwich;

157. Upgrades at 26 level crossings.

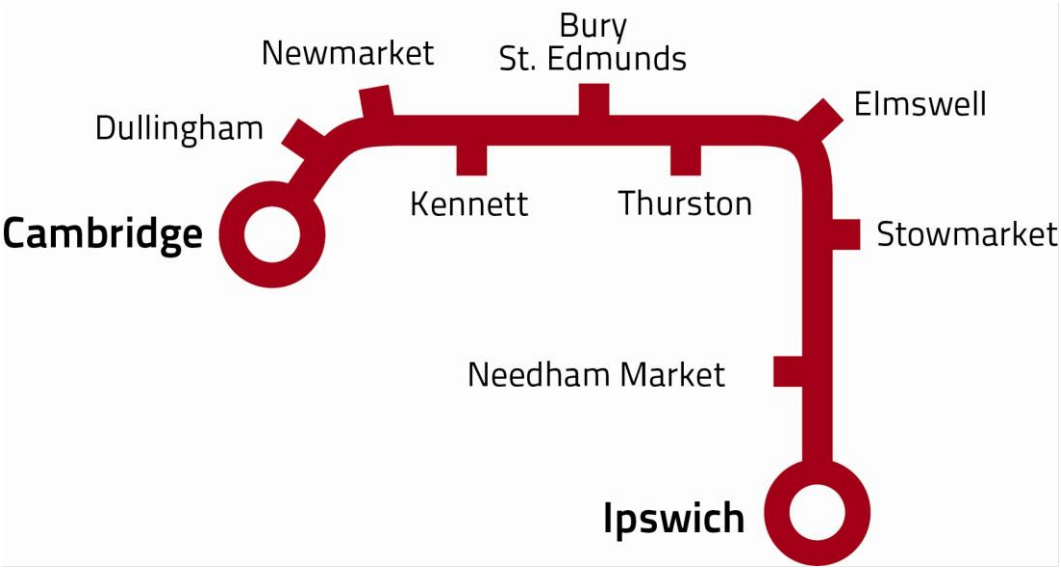
158. In addition, rail routes from Ipswich to Ely require investment, this includes double tracking the single track between Ely and Soham. Infrastructure improvements are also required further afield at Leicester to improve speed and capacity for more services, as set out in the Midlands Hub Connect Rail Strategy.

159. The single track between Soham and Ely creates line speed and capacity issues for freight and passenger rail services. The lack of capacity on the single-track line is likely to be further constrained by a new station at Soham which is being promoted by the Cambridgeshire and Peterborough Combined Authority. The station is due to open in 2022 and will consist of one single-track platform. Double tracking of the current single line is not included in the Soham Station project.

160. The Newmarket horseracing industry also want to see a new loop developed at Chippenham Junction, which would allow direct rail access from Newmarket to Ely, the Midlands and the North.

Ipswich to Cambridge Line

Figure 58. **Ipswich to Cambridge Line**



161. The Cross-Country route also forms part of the rail route for the passenger service between Ipswich and Cambridge, which plays a valuable role in connecting communities in Suffolk with key urban areas across the county and to Cambridge and London. An hourly passenger rail service from Ipswich to Cambridge operates on the line.

162. A study by Network Rail in 2019 (the Cambridge Corridor Study) indicated that passenger growth on the line has grown significantly, by 7%- the highest growth of all rail corridors to and from Cambridge. With housing growth of over 5,000 homes by 2036 in Bury St Edmunds and further growth of the number of homes in Thurston, it is likely that demand will rise further.

163. The Suffolk Rail Prospectus (Suffolk County Council 2015, **APPENDIX II TO ANNEX C**) sets out Suffolk County Council's vision to see a half-hourly passenger rail service and the delivery of a direct rail link to Oxford from Ipswich, as part of the East West Rail Link. It is also proposed that the East West Rail Link could provide a secondary freight route. The Cambridgeshire and Peterborough Combined Authority also recognises the importance of East West Rail and the need for a half-hourly Ipswich to Cambridge rail link. Suffolk has an ambition to have a frequent rail link to Oxford, which can be delivered by a half-hourly passenger rail service between Ipswich and Cambridge.

164. Although some of the line between Ipswich to Cambridge is double-tracked, the line from Newmarket to Cambridge is single-tracked, which creates a constraint on capacity, restricting the provision for any additional passenger rail services.

165. Investment to the ‘throat’ of Cambridge would also be required to provide extra capacity, and a number of level crossings, including on the approach to Cambridge and at Stowmarket, would need to be upgraded.

166. If the Ipswich to Cambridge rail corridor was to become a secondary freight route then it would require a gauge upgrade of the track to W10 between Chippenham Junction and Cambridge, and onwards to London via the West Anglia Main Line route.

167. The Cambridgeshire and Peterborough Combined Authority is hoping to build a new station at Cambridge South, with work to commence in 2023 and operation from 2025. The Cambridge South Station will also present an opportunity for services from Ipswich to link directly with the Biomedical Campus (which will be served by the new station) and is expected to deliver 3,750 jobs. The Cambridge South Station will also support the development of 4,000 new homes.

4. Conclusion

168. Sizewell and the immediate area are largely rural with Leiston the local market town. The rural population of Suffolk are required to travel long-distances to access essential services, education and employment opportunities.

169. Those without access to a car rely on public transport to travel to other communities, and the East Suffolk Line provides the only means of public transport for longer distance travel connecting the Suffolk coast to Ipswich and the main railway line network. The East Suffolk Line, along with other local and cross-regional rail routes, plays a vital role in reducing road congestion in Suffolk, ensuring that economic centres are accessible.

170. Due to the importance of the rail network in rural Suffolk, including the East Suffolk Line, the Councils see it as a priority to work with Network Rail to ensure that the railway lines are protected and enhanced so that they can continue to meet the transport needs of those without private vehicles and encourage others to move to low-carbon transport modes.

171. A number of historical constraints exist on the railways, both locally and on cross-regional routes. These constraints are affecting Suffolk’s rail aspirations to improve the frequency of passenger rail services and put challenges, and the need for investment, for increasing movement of goods by rail.

Part III: Bus network

1. Summary

172. This document examines the status of bus services in the Sizewell area, the nature of the infrastructure and the associated constraints. The destinations of the bus routes and a description of the bus facilities and availability especially at the local rail stations.

173. This document is designed to present an indication of the existing infrastructure only and should not be treated as a detailed audit.

2. Overview

174. Buses are an important form of transport especially for those without access to a car. They provide a vital link to destinations such as doctors, dentists, shops, employment, banks and post offices.

175. There has been a decline in rural public transport, between 2011/12 and 2016/17 rural bus mileage fell by over 6% (better transport 2018). The problem has been exacerbated by pressures on local government finances, resulting in reductions in support for bus services. The increase in bus operating costs have exceeded income, with rural buses carrying fewer people per mile these services are more at risk whether operated commercially or subsidised.

176. In addition to the limited availability of rural public transport there are also existing issues with roadside waiting facilities for bus users. With services being less frequent and locations often being more remote, roadside infrastructure becomes increasingly important to encourage bus usage. The number of bus stops with footway access, a marked bus stop with a raised accessible kerb and shelter are relatively low in number in rural areas. There are still a number of unmarked stops which have been traditionally used by local bus users, but these are not obvious for visitors looking to catch a bus or to disembark.

Travel Modes

177. The census travel to work data provides an overview of the modes used to travel to/from work. Sizewell is located in East Suffolk (formerly in the Suffolk Coastal district). Car and van usage are higher than the national average and bus use is lower in Suffolk Coastal.

Table 15. Travel to work mode

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)

Bus Service Availability

178. The following maps illustrate the availability of bus services in the region and that in the Sizewell area. In the immediate Sizewell area, the scheduled fixed route services visit Leiston and the coastal locations of Thorpeness and Aldeburgh. Even where the scheduled services exist, they are not frequent and the hours of operation are restricted.

Figure 59. **Illustration of the availability of bus services in East Anglia, highlighting the urban centres**

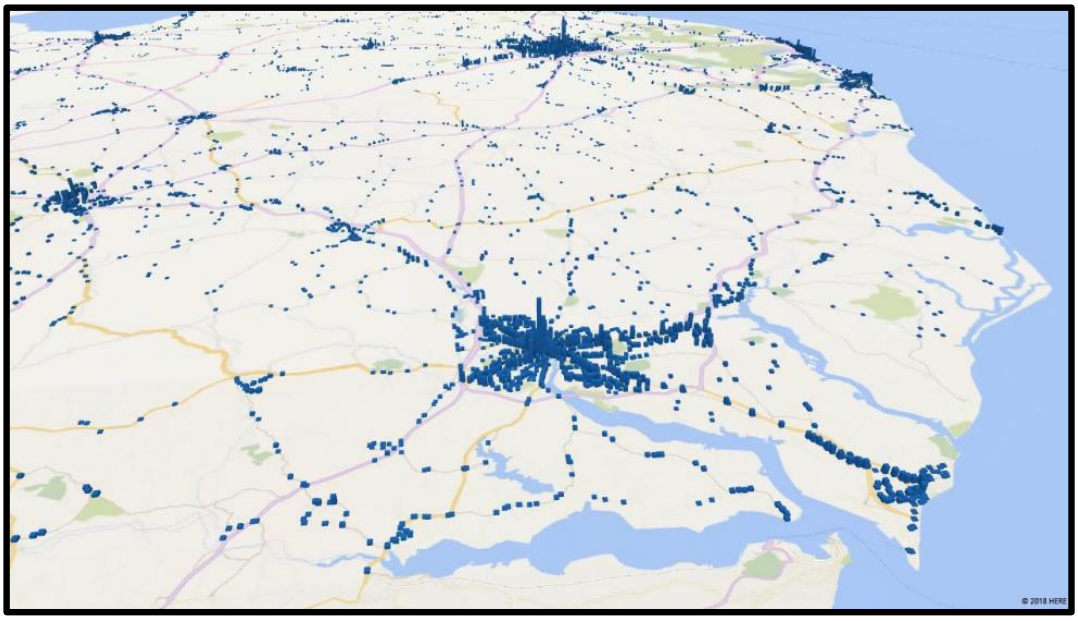
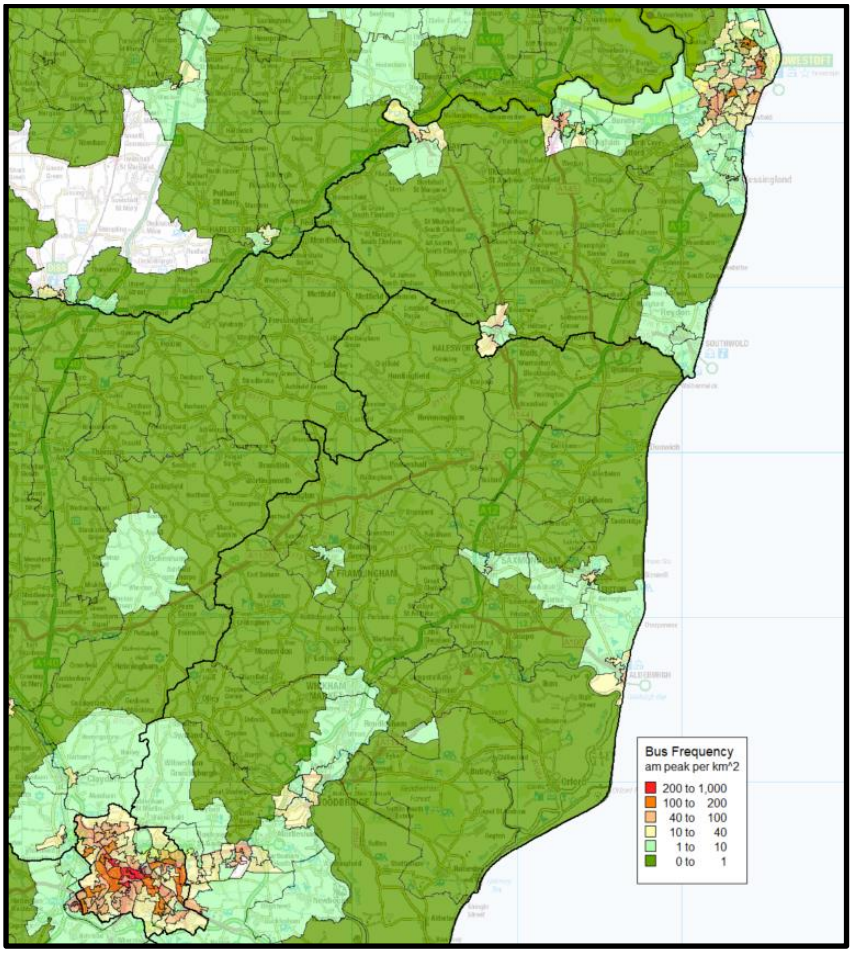


Figure 60. **Frequency of the buses that stop in a Lower Layer Super Output Area (LSOA)sometime between 08:00-09:00 on a Monday divided by the area of LSOA to give an indication of the availability of buses.**



School Transport

179. Buses also provide transport to school for pupils living in and around the Leiston/Saxmundham area. These services only run to and from the schools in term time and are not part of the public transport service.

Table 16. School bus transport services (from www.suffolkonboard.com)

LS002	Sibton - Yoxford - Kelsale - Saxmundham Free School - Leiston Alde Valley School
LS003	Blythburgh - Darsham - Westleton - Theberton - Leiston Alde Valley School
LS004	Theberton - Middleton Primary School / Saxmundham Free School - Yoxford
LS006	Bruisyard - Rendham - Saxmundham Free School
LS007	Walberswick - Yoxford Primary School
LS008	Sibton - Peasenhall - Yoxford Primary School
LS010	Wenhaston - Walpole - Darsham - Yoxford Primary School - Saxmundham Free School
LS011	Ramsholt - Bawdsey - Chillesford - Saxmundham Free School
LS012	Friston - Eastbridge- -Alde Valley Academy
LS014	Chillesford - Snape - Friston - Saxmundham Free School
LS017	Sutton - Snape - Leiston Alde Valley School
LS018	Little Glemham - Saxmundham Free School - Leiston Alde Valley
LS019	Ipswich - Wickham Market - Saxmundham Free School
LS022	Little Glemham - Benhall St Mary's Primary School
LS023	Friston - Coldfair Green Primary School
LS024	Middleton - Leiston - Saxmundham Free School
LS025	Friston - Thorpeness - Alde Valley School, Leiston
LS521	Halesworth - Leiston
LS964 (Service 64)	Aldeburgh - Alde Valley School, Leiston

Car Ownership

180. Car ownership in the area shows the variance between the East Suffolk districts. The lower number of households without a car or van illustrates the absence of suitable transport alternatives and the greater distances to travel to services.

Table 17. Vehicle Ownership Levels

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)

3. Bus Routes

Services

181. There are three scheduled bus routes that pass within the immediate 5-mile radius around Sizewell, all three visiting Leiston, but not serving Sizewell itself. The three services local to Sizewell are;

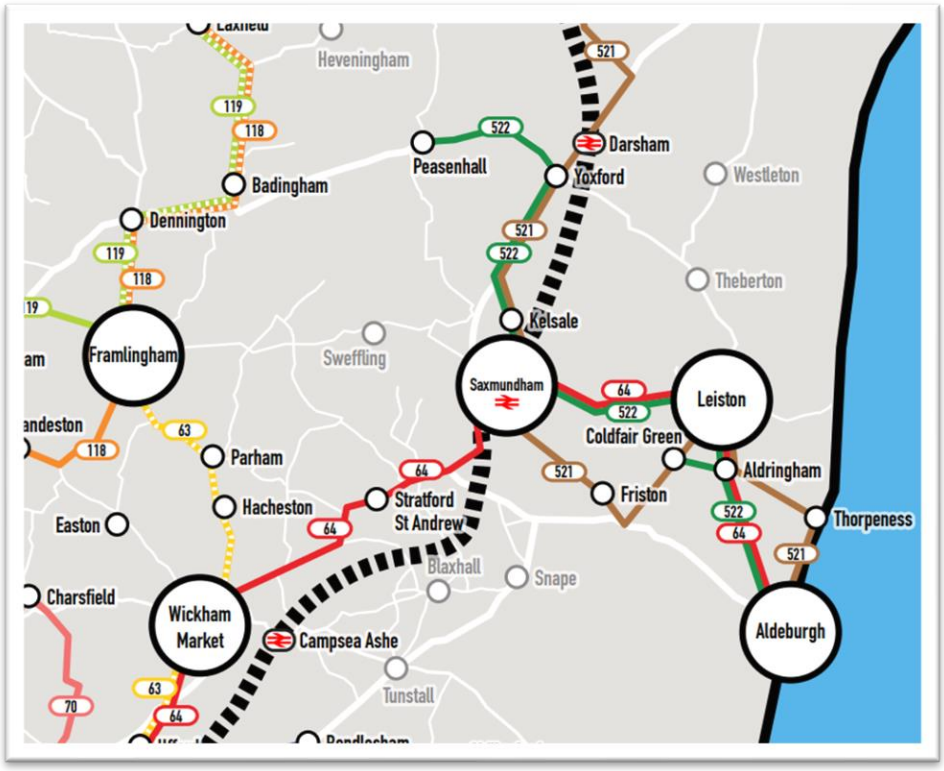
a. 64: Ipswich to Aldeburgh – Hourly Service

b. 521: Aldeburgh to Halesworth – Four Daily Services

c. 522: Peasenhall to Aldeburgh – Hourly Service

182. The route map shows the connectivity to the rail service at the local stations of Darsham, Saxmundham and Campsea Ashe (neighbouring Wickham Market). The railway station facilities section describes the infrastructure and services at the stations.

Figure 61. **Localised view of the bus route network in the Leiston area taken from www.suffolkonboard.com**



183. The First Bus services 64/65 connects Leiston to the neighbouring market towns and on to the county town of Ipswich. These routes provide an hourly service between approximately 06:00 and 20:00. There are no Sunday services on these routes beyond those between Ipswich and Woodbridge.

Figure 62. **Service 65 route map**

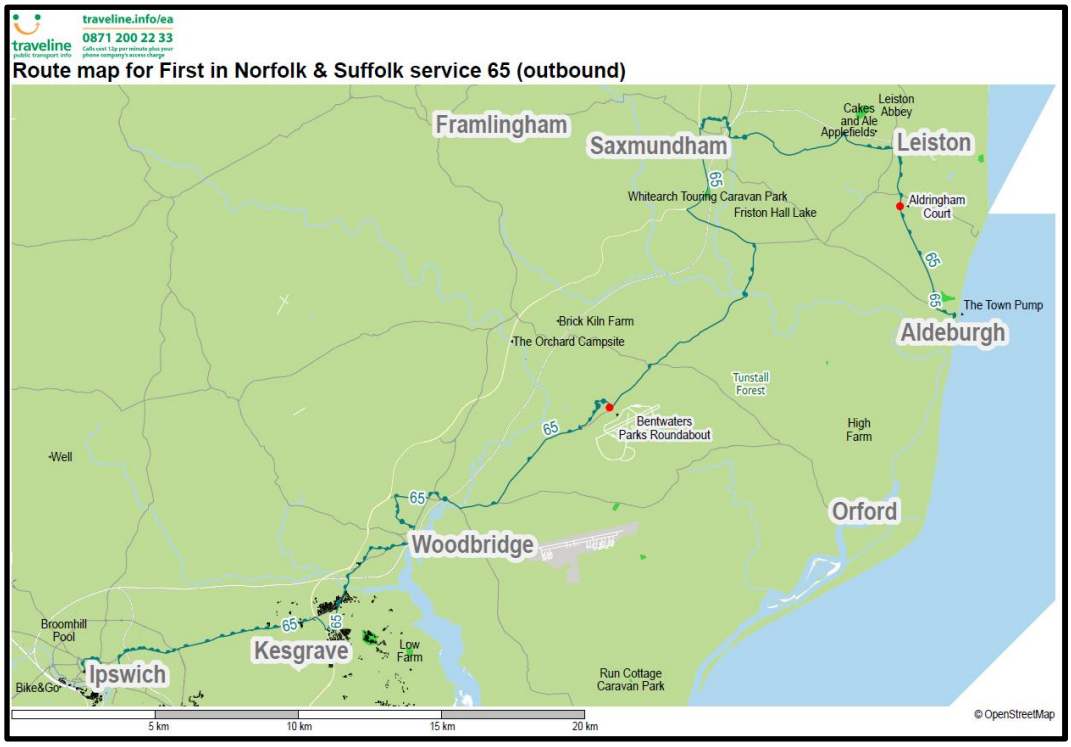


Figure 63. **Service 64 route map**

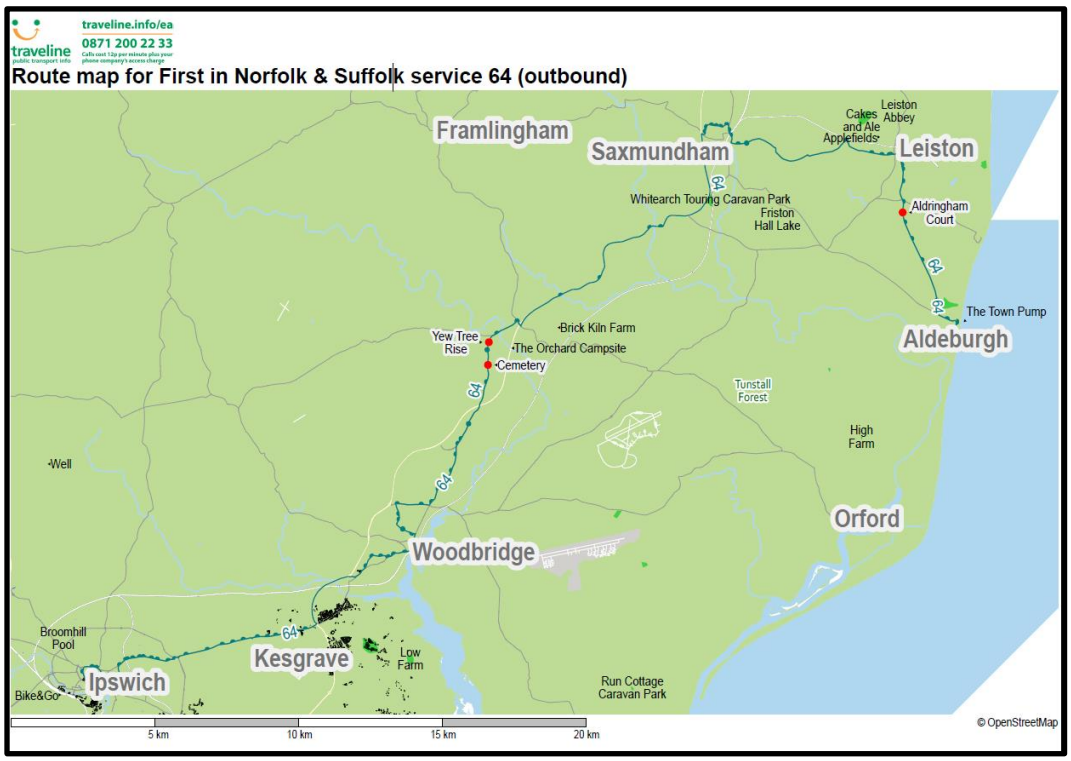
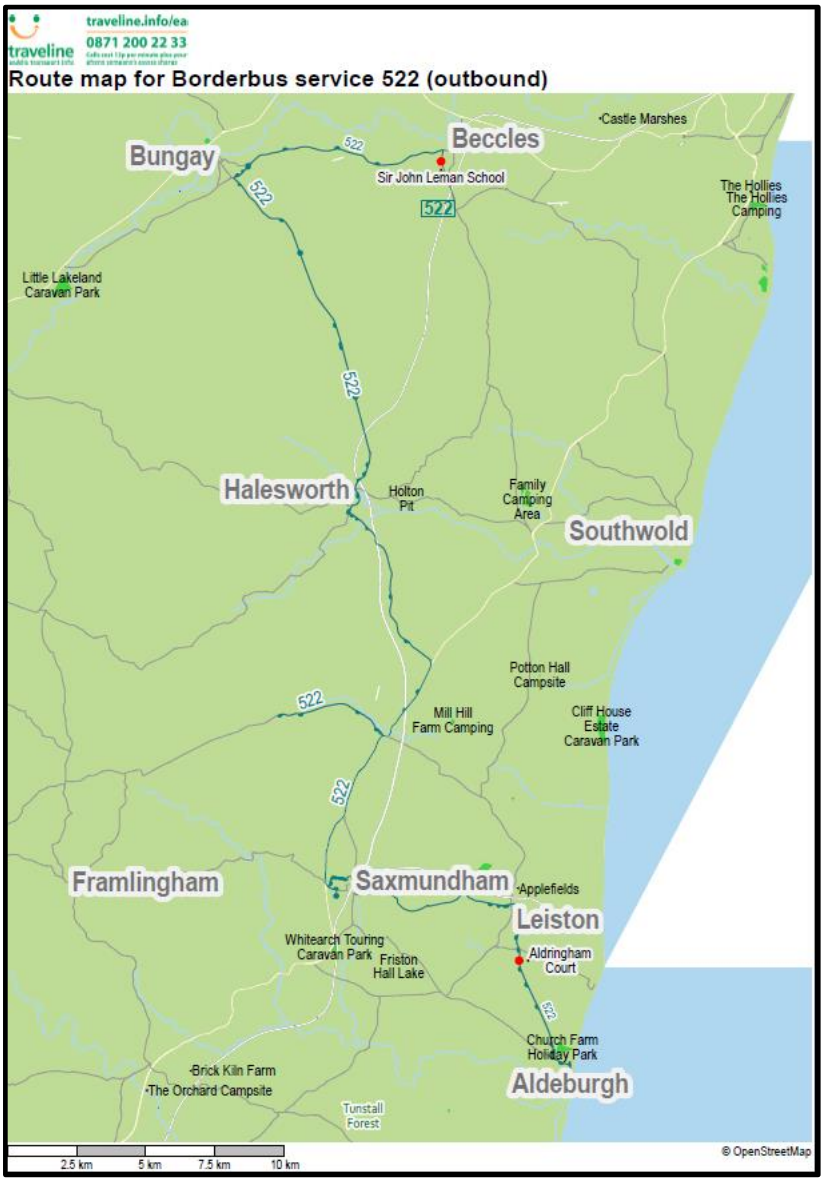


Figure 64. **Service 521 route map**

Figure 65. **Service 522 route map**



184. The Border bus service 521 runs four times a day, broadly between 09:00 and 18:30 linking Leiston and the neighbouring villages to the Saxmundham, Darsham and Halesworth rail stations, which are all on the East Suffolk line, which runs between Ipswich and Lowestoft. There are no Sunday services on this route.

185. The Border bus service 522 runs four times a day, broadly between 08:00 and 17:00 linking Leiston, Aldringham and Saxmundham. There are no Saturday or Sunday services on this route.

Train station bus facilities

186. Saxmundham railway station has bus stops situated on the roadside (Station Approach) adjoining the train station, but with no buses serving the station, due in part to the road width on the approach from the Market Place.

187. Darsham railway station is on the A12 with a level crossing of the A12 next to the station. The bus stop is unmarked on the A12 outside the station forecourt. There is a moderate provision of car parking space at the station.

188. Halesworth railway station has an unmarked stop on Station Road which is adjoining the forecourt car park. There is also a bus stop on Bramblewood Way which is marked to the north of the station with direct access through to the platform.

189. Wickham Market railway station at Campsea Ashe has an on road marked bus stop outside the station. There is currently no bus service at the railway station.

4. Constraints

Services

190. Bus services in the area are both limited in terms of the network they provide and the frequency and availability of buses serving the area. The use of bus travel to undertake a regular commute is therefore limited by these constraints to the services.

191. The small rural communities around the Sizewell area have limited timetabled bus services.

192. Those timetabled bus services are supplemented in the Sizewell area by transport services provided by Coastal Accessible Transport Service (CATS), a non-profit organisation governed by a volunteer committee. CATS provides accessible transport services for anyone who does not have access to their own transport or cannot access conventional public transport due to mobility or rural isolation in coastal Suffolk, with services including door-to-door, dial-a-ride and community car services.

Roadside infrastructure

193. The bus stop infrastructure is of varying provision with only a small number of stops marked with a bus stop flag and an even smaller number with bus stop shelters. Very few of the stops in the area have appropriately raised kerbs to facilitate ease of access to and exit from buses, this is especially inconvenient for those who are mobility impaired and those who may have to manage buggies, wheelchair or luggage.

194. One of the main stops in the town of Leiston, on Main Street, near the library does not have a formally marked bus stop infrastructure, but relies on local knowledge of the area.

Figure 66. **Leiston, Main Street, Library bus stop**

195. The northbound bus service on the opposite side of the Main Street does have a bus shelter and an information case on a nearby lamp column, making it one of the best provided for stops in the area. This stop however does not have a raised kerb to aid access or exit from the bus.

Figure 67. **Leiston, Main Street, opposite library**

196. In the more rural parts of the bus routes there are stops which are unmarked and require local knowledge or online investigation to be identified. The B1119 Clay Hill bus stops are approximately 1km west of Leiston and are unmarked on both sides of the road. This stop provides the nearest stop to the nearby 45-acre holiday park.

Figure 68. **Leiston, B1119, Clay Hills (Cakes & Ale) stops**

197. Other stops in the area have some infrastructure, but do not have a very suitable space to wait for the bus. The Haylings Road stop is signified by the flag and case on the lamp column, but with very limited space for passengers to wait or to disembark. The absence of a footway creates problems in accessing the stop and for those waiting for the bus.

Figure 69. **Leiston, Haylings Road, near Woodlands**

5. Conclusion

198. Sizewell and the immediate area are largely rural with Leiston providing the local market town. The rural population of Suffolk relies on transport to access essential services, retail and employment opportunities. Those without access to a car rely on public transport to travel to other communities. With low population densities the operational costs are higher than in the urban areas and therefore the frequency of services is lower adding to the transport issues for many residents. The level of infrastructure provision reflects the rural nature of the area.

PART IV. Pedestrian and cycling infrastructure

1. Summary

199. The area described is that from the coast to the A12 which includes the rural market town of Leiston (population 5,508 2011 census) and smaller villages linked by roads and public rights of way. The area is popular with walkers and cyclists, with the Suffolk coast covering a around 50-mile stretch of heritage and Area of Outstanding Natural Beauty (Suffolk Coast and Heaths) coastline. Both visitors and local residents use the area for leisure activities in addition to using the network to get to work, school, shopping and medical facilities. The area also provides a natural environment to benefit physical and mental health and to help mitigate the impact of the climate emergency.

200. This document is designed to present an indication of the existing local walking and cycling infrastructure only.

2. Examples of facilities

201. In the town of Leiston there are footways alongside most carriageways, however even in the well-used retail area of the High Street there is a limited width of footway with constrained space for pedestrians to pass one another. The use of mobility scooters and buggies adds to the issue of movement along the footway especially for passing space, giving the potential for pedestrians to enter into the carriageway. Cyclists have no additional infrastructure and are required to use the carriageway.

Figure 70. **Leiston High Street (B1122)**

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202. North of Leiston the B1122 Abbey Road is the main route to the north and west. It is a relatively narrow road for its category and although there is a footway alongside it within a system of street lighting, the path is very narrow and immediately adjacent to the traffic.

Figure 72. **B1122 Abbey Road, Leiston**

203. Further out of Leiston centre, Haylings Road (B1069) on the route to Coldfair Green, has limited availability of a footway alongside the carriageway. The footway varies in width and in some stretches the footway gives way to grass verge as the route leaves the built-up area. The absence of adequate footways discourages walking in the area with the increased perception of vulnerability for those walking and cycling.

Figure 73. **Leiston, Haylings Road**

Figure 74. **Leiston, Haylings Road**

204. Away from the town of Leiston, around the village of Eastbridge the roads are narrow and without any associated footway. The narrow roads are bi-directional, but it is often problematic to allow two vehicles to pass. Roadside vegetation, banks and ditches make it difficult for vehicles to negotiate around other vehicles and cyclist or pedestrians using the road. The roads are relatively quiet.

Figure 75. **Road to Eastbridge**

205. At Middleton Moor (B1122) the road is relatively wide. Cyclists have to ride on the carriageway with the motorised vehicles. Pedestrians have the option of walking on the asphalt surface or using the uneven roadside grass verge.

Figure 76. **Middleton Moor (B1122)**

3. Public Rights of Way

206. The public rights of way network cross the carriageway at regular intervals. The Middleton-cum-Fordley walking route (see http://www.discoversuffolk.org.uk/assets/Walks/Up-to-6-miles/Middleton-Cum-Fordley.pdf) explores the local green lanes including a permissive path which provides for walkers, including local residents, a route which avoids the carriageway bends on the B1122.

Figure 77. **Discover Suffolk map showing Middleton Moor permissive path (18-19 on map)**

Figure 78. **Middleton Circular Walk route (permissive path)**

207. The Middleton circular walks also have access for walkers across the B1122 near Trust Farm (17 on Discover Suffolk map) utilising the farm access track. The Discover Suffolk walks pamphlet offers a variety of circular routes around Middleton, however the B1122 does bisect the routes and requires crossing to continue the walk on the routes to the south of the road. The Middleton circular walks provide an example of the popularity of recreational walking in this scenic area.

208. There is an extensive network of public rights of way and quiet lanes and tracks across much of East Suffolk as illustrated in the map of the Theberton area. This network attracts walkers keen to enjoy the traffic free routes through the countryside.

Figure 79. **Theberton area map showing public rights of way in green**

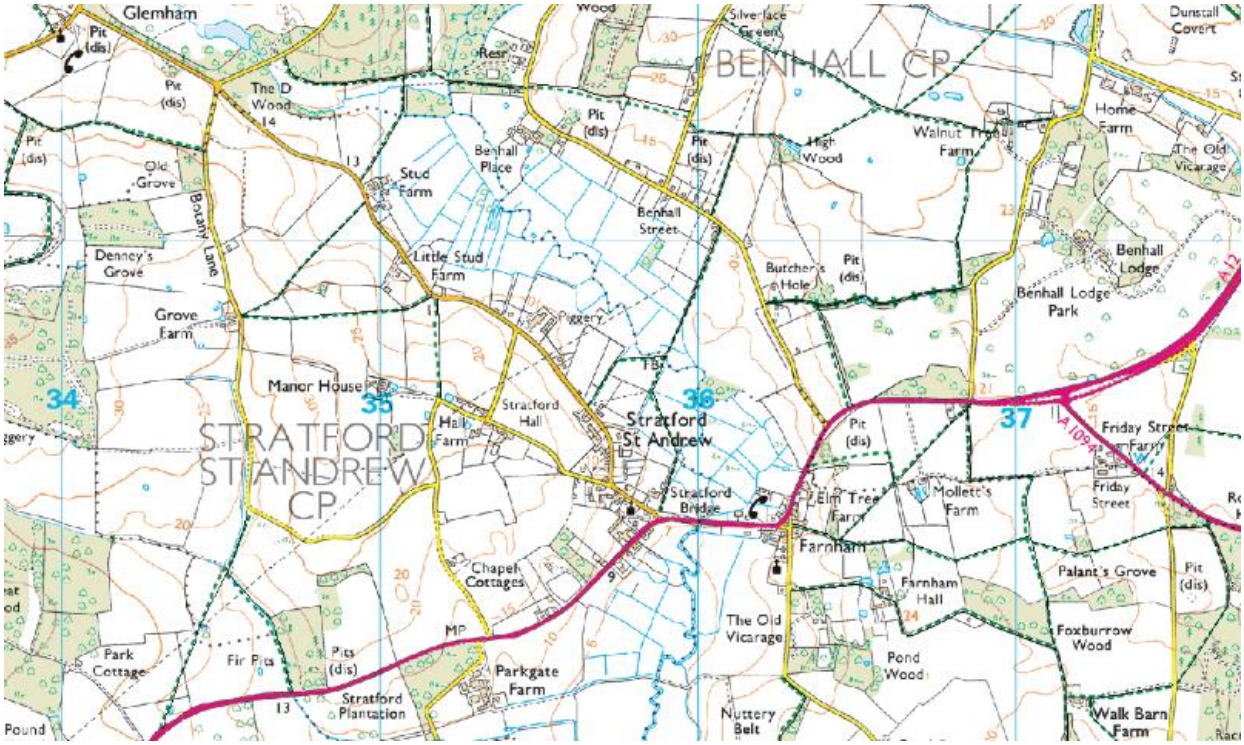
Figure 80. **Middleton Circular Footpath to Trust Farm**

209. There are locations elsewhere, where public rights of way cross the A12. South of Saxmundham, a public bridleway used by local horse riders, crosses the A12 to give access to the network of quiet lanes and bridleways to the west. South of Stratford St Andrew the regional cycle route 41 (Suffolk Coastal Route) crosses the A12 and requires cyclists to negotiate the two lanes of traffic. The traffic volumes on the A12 are a significant contrast to the quieter roads between the villages of Great Glemham and Blaxhall.

Figure 81. **A12 RCN41 crossing at Parkgate Farm, near Stratford St Andrew**

210. Stratford St Andrew also has an extensive network of public rights of way linking the settlements in the area along field boundaries and adjoining quiet tracks and lanes. This network provides for a variety of walking routes around the area.

Figure 82. **Map of Stratford St Andrew area showing public rights of way in green**



211. At the coast and adjoining the Sizewell power station site, the nationally promoted Suffolk Coast Path provides an expansive open area for dog walkers, walker and joggers to enjoy the coast and the beach. This area is supported by a formal car park and cafe to cater for the visitors, visitors were estimated at 195,557 per annum at the beach and 32,314 at the coast path (Sizewell Public Access Visitor Survey 2014 [APP-268]).The visitor survey revealed that the reasons for visiting were related to the scenery and tranquillity of the area. The coast path route is also proposed as part of the England Coast Path which is planned to be the longest waymarked coastal path in the world.

Figure 83. **Sizewell coast path**

Figure 84. **Sizewell Beach cafe**

212. The Sandlings Walk long distance trail, also nationally promoted, follows the coast path turning inland using the permissive path network through Goose and Kenton Hills, continuing north on Bridleway 19. Kenton & Goose Hills are a locally well used amenity (34,174 visits p.a. Sizewell Public Access Visitor Survey 2014).

4. Constraints

213. The area consists of many small communities linked by a limited number of routes, these are most often roads without associated footways and street lighting meaning that there is less infrastructure for walking and cycling. The neighbouring field boundaries of hedges and ditches make it difficult to provide safe spaces for the cyclists and walkers.

214. The network's public rights of way can provide an alternative link to communities for local residents and visitors looking for a leisurely walk. These rights of way are often unsurfaced and liable to becoming less attractive to use in wet conditions. Where the rights of way cross the roads there is often no formal provision at the crossing points.

215. There are gaps in the ROW network resulting in walkers, cyclists and horse riders not being able to make continuous journeys off road away from traffic.

216. With the network of narrow roads there is limited capacity for traffic to some of the communities and limited opportunity to change this within the limited extents of the maintainable highway.

5. Conclusion

217. Sizewell is within the Area of Outstanding Natural Beauty which makes it an ideal tourist destination and a particularly attractive place to cycle and walk. There is an absence of footways and cycling infrastructure to mitigate the concerns of people using the network who face conflict with motorised vehicles. It is the nature of the historic rural environment that the roads exist with the field boundaries without space for any segregation of the modes of travel.

218. For tourists visiting the area, the public rights of way offer alternative routes to enjoy the countryside away from traffic. Those seeking to access services (e.g. retail, education and employment) in the area face the problems of the distances to these services and the ease of making the trip by cycling or walking on the current network.