HIGHWAYS AGENCY

Safe roads, reliable journeys, informed travellers

Route-based strategy: evidence report

East of England

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An executive agency of the Department for Transport

Document History

East of England route-based strategy evidence report

Highways Agency

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1 Introduction

1.1 Background

1.1.1 The Highways Agency is responsible for planning the long term future and development of the strategic road network.

1.1.2 Route-based strategies (RBSs) represent a fresh approach to identifying investment needs on the strategic road network. Through adopting the RBS approach, we aim to identify network needs relating to operations, maintenance and where appropriate, improvements to proactively facilitate economic growth.

1.1.3 The development of RBSs is based on one of the recommendations included in Alan Cook's report *A Fresh Start for the Strategic Road Network*, published in November 2011. He recommended that the Highways Agency, working with local authorities (LA) and local enterprise partnerships (LEPs), should initiate and develop route-based strategies for the strategic road network.

1.1.4 The then Secretary of State's accepted the recommendation in the Government's response (May 2012), stating that it would enable a smarter approach to investment planning and support greater participation in planning for the strategic road network from local and regional stakeholders.

1.1.5 The Highways Agency completed the following three pilot strategies which have been published on the Agency website:

- A1 West of Newcastle
- A12 from the M25 to Harwich (including the A120 to Harwich)
- M62 between Leeds and Manchester.

1.1.6 Building on the learning from those pilot strategies, we have divided the strategic road network into 18 routes. A map illustrating the routes is provided in Appendix A. The East of England route is one of that number.

1.1.7 RBS are being delivered in two stages. Stage 1 establishes the necessary evidence base to help identify performance issues on routes and anticipated future challenges, takes account of asset condition and operational requirements, whilst gaining a better understanding of the local growth priorities.

1.1.8 In the second stage we will use the evidence to take forward a programme of work to identify possible solutions for a prioritised set of challenges and opportunities. It is only then that potential interventions are likely to come forward, covering operation, maintenance and if appropriate, road improvement schemes.

1.1.9 The RBS process will be used to bring together national and local priorities to inform what is needed for a route, while delivering the outcomes in the performance specification.

1.1.10 Using the evidence base and solutions identification studies, we will establish outline operational and investment priorities for all routes in the strategic road network for the period April 2015 – March 2021. This will in turn feed into the Roads Investment Strategy, announced by the Department for Transport in Action for Roads.

1.2 The scope of the stage 1 RBS evidence report

1.2.1 During the first stage of RBS, information from both within the Agency and from our partners and stakeholders outside the Agency has been collected to gain an understanding of the key operational, maintenance and capacity challenges for the route. These challenges take account of the possible changes that likely local growth aspirations, or wider transport network alterations will have on the routes.

1.2.2 The evidence reports:

- Describe the capability, condition and constraints along the route;
- Identify local growth aspirations
- Identify planned network improvements and operational changes
- Describe the key challenges and opportunities facing the route over the five year period
- Give a forward view to challenges and opportunities that might arise beyond the five year period.

1.2.3 The 18 evidence reports across the strategic road network will be used to

- Inform the selection of priority challenges and opportunities for further investigation during stage 2 of route-based strategies
- Inform the development of future performance specifications for the Highways Agency.

1.2.4 A selection of the issues and opportunities identified across the route are contained within this report, with a more comprehensive list provided within the technical annex. This is for presentational reasons and is not intended to suggest a weighting or view on the priority of the issues.

1.2.5 The evidence reports do not suggest or promote solutions, or guarantee further investigation or future investment.

1.3 Route description

1.3.1 The East of England route consists of a number of routes across East Anglia, these being A11, A12, A47 and A120. Each of these is described in more detail below.

A11 (M11 near Cambridge to A47 at Norwich)

1.3.2 The A11 trunk road runs from M11 J9 to the A47 at Norwich. It is predominantly dual carriageway, the only remaining single carriageway section being between Mildenhall in Suffolk and Thetford in Norfolk. This section is currently being widened to dual carriageway, due for

completion by December 2014. The A11 fulfills both a north-south and an east-west function for strategic traffic. It provides the most direct link from Norfolk to the motorway network at the M11. It also connects the major communities in Norfolk and Suffolk to each other and to Cambridgeshire.

A12 (M25 Brentwood to A14 Ipswich & Lowestoft harbour to A47 Great Yarmouth)

1.3.3 The A12 trunk road has two distinct sections. The longer of these runs between the M25 and A14, varying in standard between dual two lane and dual three lane carriageways. This section is part of the trans-European comprehensive network. The reported traffic flows for this section range from around 60,000 to over 80,000 vehicles per day two-way, with heavy goods vehicles accounting for between 10 - 15% of the total flow. When compared to roads within the East of England, the A12 is amongst the most heavily trafficked.

1.3.4 Along the route, there are junctions with other major routes and many local roads. In addition there are frequent private accesses and businesses that directly join the A12 and A120. For example, the 44 miles Essex section includes 49 private accesses and six service stations with direct frontage access. There are also 9 miles of cycle ways and footways alongside the road and 39 public rights of way across different parts of the road[1].

1.3.5 This part of the A12 forms a major strategic link between London and the major east coast ports of Felixstowe and Harwich, and serves the major settlements of Brentwood, Chelmsford Colchester and Ipswich. For some communities, particularly some smaller ones, the A12 provides the only means of access. This part of the route is closely paralleled by the Greater Anglian rail line connecting to Ipswich and Norwich to the north and serving as a major commuter line to London, connecting all the major settlements along the corridor.

1.3.6 Several previous studies have been carried out into the A12 – these include the *A12 Commission Inquiry (2008), London to Ipswich Multi Modal Study (LOIS) (2002)*, *A12 Route Management Strategy (June 2001)*, and two DfT 'delivering a sustainable transport system' (DaSTS) studies; *London to Haven Ports study (September 2010)* and the *Substantial Transport Options for the Growing A12/GEML corridor towns (May 2010)*.

1.3.7 The A12 south of Great Yarmouth provides trunk road access to Lowestoft as well as performing a local function. This section goes through the urban areas of Lowestoft and great Yarmouth where it is single carriageway. It is dual two lane standard between these communities with at-grade junctions. It carries between 5000 and 35000 vehicles per day. This section includes the Bascule bridge across the entrance to the port of Lowestoft.

[1] Information provided by the A12 Report of Commission Inquiry

A47 (A1 Peterborough to A12 Great Yarmouth)

1.3.8 The A47 runs between Birmingham and Great Yarmouth but is trunk road only between the A1 at Peterborough and the A12 at Great Yarmouth. It forms the major east-west route across northern East Anglia, serving the major communities of Peterborough, Kings Lynn, Norwich and the town and port of Great Yarmouth. It forms part of the trans-European comprehensive network. It connects to other parts of the strategic road network at the A1, A11 and A12 and also to other principal routes A15, A16, A17, A10 and A140.

1.3.9 The A47 varies considerably in standard over its length between single and dual carriageway standard, with at-grade and grade separated junctions, in what tends to be perceived as an incoherent manner in relation to its range of journey types. It is single carriageway between the A1 and Ailsworth bypass with at-grade junctions and accesses, handling predominantly longer distance trips but also providing the main road access to several smaller communities. The Peterborough section is mainly dual carriageway with grade-separated junctions and facilitates a significant proportion both of local trips and long distance traffic.

1.3.10 East of Peterborough the A47 is then predominantly single carriageway with at grade roundabouts and priority junctions. There are, however, a number of dual carriageway sections, these being at Thorney (with at-grade junctions), Walton Highway to Tilney High End (grade separated and at-grade), Kings Lynn (grade separated and at-grade), Swaffham (grade separated), Dereham (grade separated and at-grade), Norwich (grade separated) and Acle (at-grade).

1.3.11 The A47 experiences significant seasonal variations associated with tourism in the broads and coast of Norfolk.

A120 (M11 Bishop's Stortford to Harwich)

1.3.12 The A120 carries between 14,000 and 40,000 vehicles per day. At its western end it serves Stansted Airport, connecting to the M11. A significant proportion of the heavy goods vehicles using the eastern section between Colchester and Harwich are travelling to and from the port of Harwich at the eastern end of the route. It also serves the communities of Colchester, Braintree and Bishop's Stortford. The whole length is part of the trans-European comprehensive network.

1.3.13 This route connects with a number of other routes for which RBS are also being developed. These are:

- **London Orbital & M23 to Gatwick** (A12 connects to M25 J28);
- **London to Leeds (East)** (A120 connects to M11 J8, A11 connects to M11 J9, A47 connects to A1 at Peterborough);
- **Felixstowe to the Midlands** (A14 connects to A11 east of Cambridge, A14 connects to A12 south of Ipswich)

The route in its broader geographical context is shown in Figure 1 below.

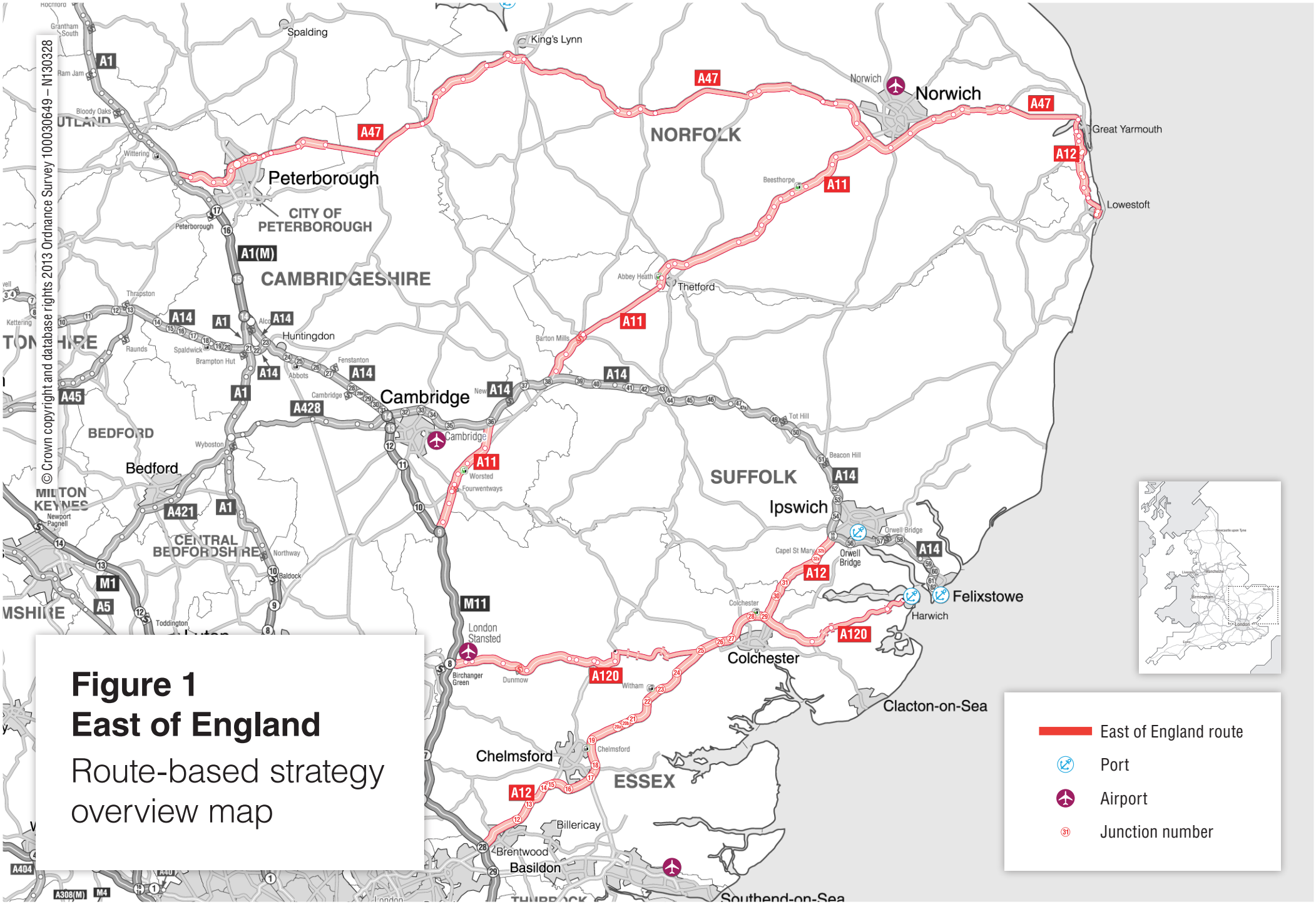


Figure 1
East of England

Route-based strategy overview map

2 Route capability, condition and constraints

2.1 Route performance

2.1.1 The strategic road network comprises only three per cent of England's road network, but it carries one-third of all traffic. Around 80 per cent of all goods travel by road, with two-thirds of large goods vehicle traffic transported on our network.

A11

2.1.2 Although soon to be completely dual carriageway, there remain a number of at-grade junctions and central reserve gaps along its length. The Thetford roundabouts require improvement by developers to accommodate 5,000 new homes and some commercial growth in the Thetford Sustainable Urban Expansion (currently awaiting planning permission).

A12

2.1.3 The A12 between the M25 and A14 varies in standard between dual two lane and dual three lane carriageways. This section carries heavy traffic flows, is often congested, has a history of collisions and incidents which often disrupt traffic over a wide area and are generally regarded as stressful for drivers.

2.1.4 Congestion is experienced routinely on links along the length of the A12, and particularly at:

- Brook Street Interchange to Furze Hill Interchange
- Howe Green Interchange (A130) to Boreham Interchange
- Hatfield Peverel Junction to Colemans Interchange
- Colemans Interchange to Marks Tey Interchange
- A1124 Eight Ash Green Junction.

2.1.5 Local authorities and the business community perceive there to be a serious lack of investment in the A12 and believe this to be seriously constraining growth in the corridor. There are substantial growth aspirations along the corridor which are likely to be constrained by what is perceived as poor overall performance of this section of route.

2.1.6 The A12 in Lowestoft and Great Yarmouth is generally urban in nature, being single carriageway with much lower traffic levels, whereas the section between the two towns is dual carriageway with at-grade junctions. The Lowestoft section includes the link with the highest casualty rate (ie per distance travelled) of the whole of England's strategic road network (SRN), but this also happens to be very nearly the least trafficked link on the entire SRN. In practice casualty numbers are relatively low, consistent with similar urban routes. Lowestoft's bascule bridge significantly influences capacity, speed and reliability of the route in Lowestoft.

2.1.7 The northbound section of the A12 is part of the local road network of Lowestoft itself. Due to its very restricted urban nature this part the route is not always perceived to fulfil a strategic function. Changes to its layout are often initiated by Suffolk County Council as a result of the needs of the local road system within Lowestoft. The needs of motorised road users need to be considered in conjunction with the needs of pedestrians and cyclists.

A47

2.1.8 The standards and level of service on the A47 varies considerably over its length. It is widely held by local authorities and the business community along its length to be a significant constraint to growth in its current condition.

2.1.9 The A47 is single carriageway between the A1 at Wansford and Ailsworth bypass. Its junction with the A1 experiences peak time congestion particularly on the south bound off slip. There is a history of fatal and serious collisions along this length, mainly associated with right turns at at-grade junctions and accesses.

2.1.10 The Peterborough section is mainly dual carriageway with grade-separated junctions. The A47 Dogsthorpe junction is, however, grade separated in favour of the A15 below it, A47 traffic experiencing regular peak time delays.

2.1.11 East of Peterborough many of its at-grade junctions experience congestion at peak times. The A47 between Guyhirn and Wisbech runs along Guyhirn Bank, being single carriageway on a high embankment with at-grade roundabouts at each end, restricting space for maintenance activity as well as experiencing regular congestion at peak times.

2.1.12 A47 Wisbech bypass is single carriageway with at-grade roundabouts, experiencing congestion at peak times in particular at A1101 Elm High Road roundabout. A mitigation strategy has been developed to accommodate growth in Wisbech.

2.1.13 A47 Broad End Road, Wisbech is a single carriageway with a busy staggered cross roads with known safety issues related to overtaking in right turn facilities.

2.1.14 King's Lynn & West Norfolk Borough Council's growth proposals include up to 1,600 houses up to 2026, with the potential to increase to 3,000 - 3,500 beyond 2031, which would require a new junction to the east of the A47/A10/A149 junction at King's Lynn. The A47/A10/A149 Hardwick roundabout and A47 link from the new junction may also need a significant upgrade.

2.1.15 The route passes through the communities of Middleton, East Winch and Little Fransham to the east of King's Lynn. The single carriageway section east of North Tuddenham experiences regular morning peak period congestion. Though grade separated, the junctions on the A47 Norwich Southern Bypass at A1074, A11 and A1042 all suffer regular heavy congestion. The threat to growth has led Norfolk County Council

to lobby the government for large scale improvement schemes on both the A47 and the local road network to address this.

2.1.16 The A47 Acle Straight, east of Norwich, runs across low lying marsh land. It has a poor safety record and is notoriously difficult to maintain and manage due to congestion and very long diversion routes particularly at peak holiday periods, this being the main route into Great Yarmouth. The ongoing expansion of the Port of Great Yarmouth will further exacerbate this issue.

A120

2.1.17 The A120 carries between 14,000 and 40,000 vehicles per day. At its western end it serves Stansted Airport, connecting to the M11. It is dual carriageway between the M11 and Braintree and single carriageway between Braintree and the A12 at Marks Tey. East of the A12 at Colchester it is initially dual carriageway becoming single after its junction with the A133 for the rest of its length. A large proportion of the heavy goods vehicles using the section east of the A12 are travelling to and from the port of Harwich.

2.1.18 The section between Stansted Airport and the western end of the Braintree bypass generally performs well, though the approaches to Galleys Corner roundabout experience peak period congestion. There are, however, several ongoing safety concerns relating to the single carriageway sections of the A120, relating to turning manoeuvres at several key give-way junctions, such as at Earls Colne road and Pellens Corner.

2.1.19 The ten most trafficked sections of this route are presented in Table 2.1. This is for the reporting period 1st April 2012 to 31st March 2013.

Table 2.1 Ten busiest sections on the route (1 April 2012 to 31 March 2013)

Rank	SRN section	Annual Average Daily Flow (AADF) (One way)	National Rank (out of 2,497)
1	**A12** between A133 (Colchester) & A1124 (Eight Ash Green) (AL2301)	43,973	496
2	**A12** between A1124 (Eight Ash Green) & A133 (Colchester) (AL211)	43,556	505
3	**A12** between A1124 (Eight Ash Green) & A120 (Marks Tey) (AL204)	40,101	601
4	**A12** between A120 (Marks Tey) & A1124 (Eight Ash Green) (AL202)	39,048	622
5	**A12** between A130/A138 (Boreham) & A120 (Marks Tey) (AL2302)	38,729	627
6	**A12** between A130/A138 (Boreham) & A414 (Sandon) (AL196)	38,423	638
7	**A12** between A414 (Sandon) & A130/A138 (Boreham) (AL2309)	38,395	642
8	**A12** between A130 (Howe Green) & A414 (Sandon)	38,005	653

	(AL2313)		
9	**A12** between A414 (Margaretting) & A1023 (Mountnessing) (AL186)	35,533	733
10	**A12** between A1023 (Mountnessing) & A414 (Margaretting) (AL187)	34,174	766

2.1.20 However, busy roads in themselves don't necessarily represent an issue – our customers' experience of driving on the network is important to us. The *Strategic road network performance specification 2013-15*, sets us high level performance outcomes and outputs under the banner of an efficiently and effectively operated strategic road network. We currently measure how reliable the network is based on whether the 'journey' time taken to travel between adjacent junctions is within a set reference time for that period, ie 'on time'.

2.1.21 Four of the ten least reliable route sections are on the urban single carriageway sections of the A12 in Great Yarmouth and Lowestoft, with the least reliable being at Lowestoft's Bascule Bridge. One other single carriageway section appears in the top ten, this being the A47 at Eye Green, Peterborough. There are a series of at-grade roundabout junctions relatively closely spaced on this section that may have some impact on its performance. These sections also suffer above-average casualty rates with several notable casualty clusters (see the safety section below).

2.1.22 The remaining five of the top ten locations are all two-lane dual carriageway sections on the peripheries of the large urban areas of Peterborough, Norwich and Braintree. In all cases their performance is related, directly or indirectly, to activity at one or more junctions. The Braintree sections of the A120 both include at-grade roundabouts known to be regularly congested at peak periods. Both the Norwich and the Peterborough sections of the A47 include grade separated junctions with major local routes serving those communities.

2.1.23 Conversely, the A120 west of Braintree and the A11 between the M11 and A14 tend to perform particularly well

2.1.24 It is worth noting that the 'on-time reliability' measurement, as listed in table 2.2, can be fairly coarse where, for instance, links vary in nature or circumstances along their length. In some cases it is possible for very localised problems to be masked within this measure. In the East of England route this is most likely to be the case for short stretches of the A47 and the more urban parts of the A120 between Braintree and Marks Tey.

2.1.25 Furthermore, as the reliability measure compares data year to year, route sections that have become consistently congested can be identified as 'reliable' in that delays can be confidently predicted.

Table 2.2 Ten least reliable journey-time locations on the route (1 April 2012 to 31 March 2013)

Rank	Location	On-time reliability measure	National Rank (out of 2,497)
1	**A12** between A12 & A1118 (Bascule Bridge SthBd, Lowestoft) (AL319)	60.0%	76
2	**A12** between A1243 (Pasteur Rd, Gt Yarmouth) & A149 (Acle New Rd, Gt Yarmouth) (AL3193)	60.0%	78
3	**A12** between A143 (Beccles Rd, Gt Yarmouth) & A1243 (Pasteur Rd, Gt Yarmouth) (AL2256)	60.1%	79
4	**A47** between A1042 & A1042 (Postwick, WBd) (AL2251)	60.6%	93
5	**A120** between A131 (Braintree E) & A131 (Braintree Sth) (AL3909)	60.9%	100
6	**A120** between A131 (Braintree Sth) & A131 (Braintree E) (AL3908)	61.6%	121
7	**A47** between A15 (Lincoln Rd, Peterborough) & A15 (Paston Parkway, Peterborough) (AL324)	61.9%	127
8	**A12** between A1243 (Pasteur Rd, Gt Yarmouth)& A143 (Beccles Rd, Gt Yarmouth) (AL2258)	62.9%	156
9	**A47** between A1139 (Eye Green, Peterborough) & A15 (Paston Parkway, Peterborough) (AL3217)	63.8%	202

2.1.26 Figure 2.1 illustrates the average speeds during weekday peak periods between 1st April 2012 and 31 March 2013. The peak periods are generally the busiest periods on the network and help us to understand the impact of the worst congestion on customers' journey times. Figure 2.1 also shows any known performance or capacity issues where the local road network interfaces with the route.

2.1.27 The sections of route experiencing regular delays or speeds consistently lower than their limits are:

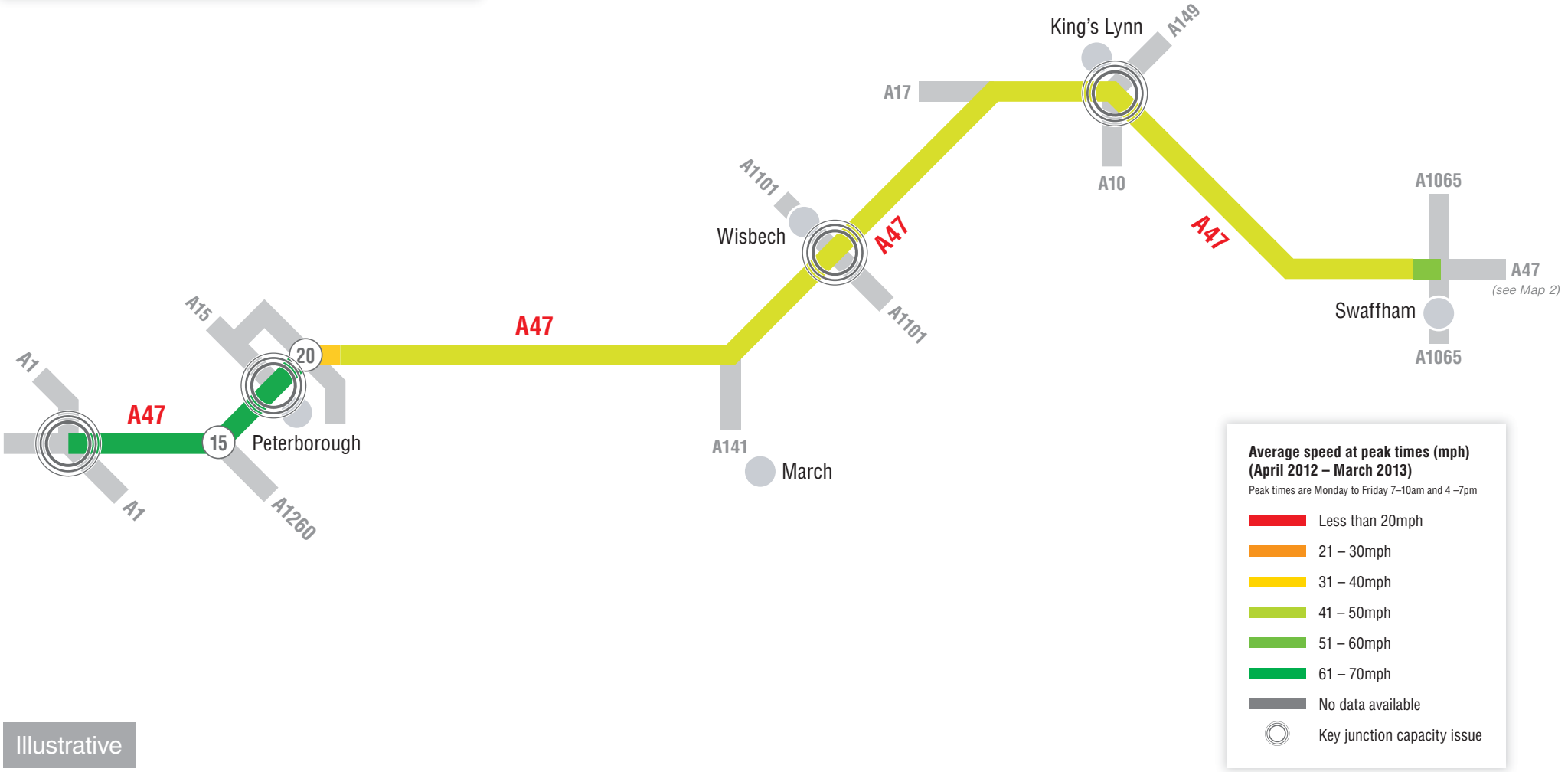
- **A11 between Mildenhall and Thetford**. This section is currently being widened to dual carriageway and, as such, the historic data is no longer representative.
- **A47 between Peterborough and King's Lynn**. Low speeds routinely occur at Eye near Peterborough which is adversely affected by congested at-grade roundabouts at peak periods. However, moderate to serious delays are experienced along virtually the whole length between Peterborough and King's Lynn. This section also suffers a higher than average casualty rate, with several casualty clusters near Peterborough and at King's Lynn that fall within the SRN's top 250 clusters.
- **A47 between Dereham and Norwich**. The single carriageway east of Dereham to Easton experiences morning peak period congestion.

- **A47 Acle to Great Yarmouth**. This section is single carriageway with at-grade roundabouts at each end. Traffic levels are being constrained by lack of capacity resulting in typically lower peak period speeds.
- **A12 Lowestoft to Great Yarmouth**. Though the majority of this stretch is dual carriageway with national speed limit its peak speeds are heavily influenced by its urban stretches at either end.
- **A120 Braintree to Marks Tey**. The western end of this section forms part of the Braintree bypass where peak period speeds are heavily influenced by congestion at the at-grade roundabouts at Galleys Corner and Marks Farm. East of Braintree, the A120 is single carriageway with numerous accesses and minor side roads. There are also frequent minor incidents along this stretch not causing injuries but nonetheless result in disproportionate disruption.

Figure 2.1

Network performance 2012/13

Peak period speeds

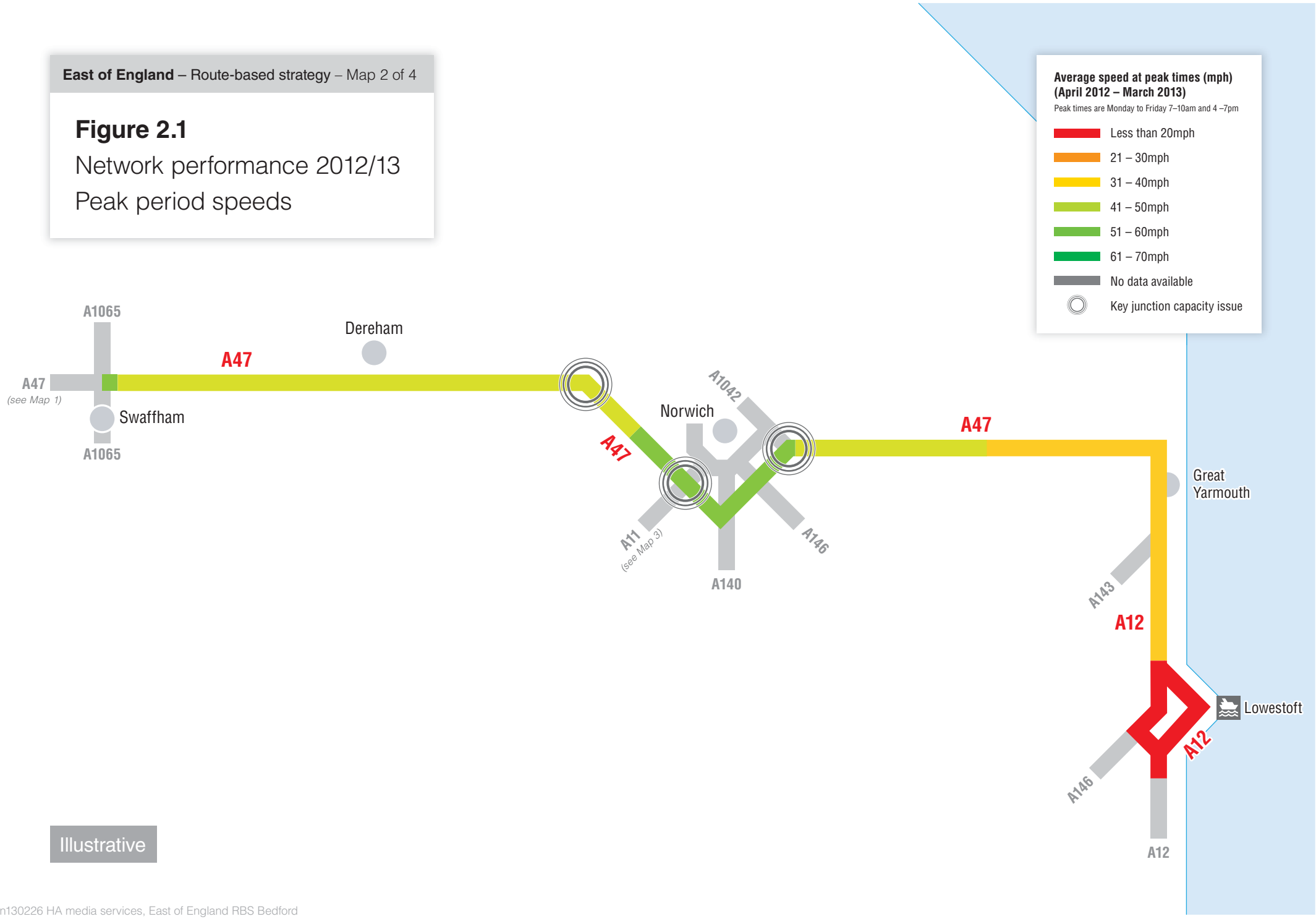


Illustrative

Figure 2.1

Network performance 2012/13

Peak period speeds



Illustrative

Figure 2.1

Network performance 2012/13

Peak period speeds

Illustrative

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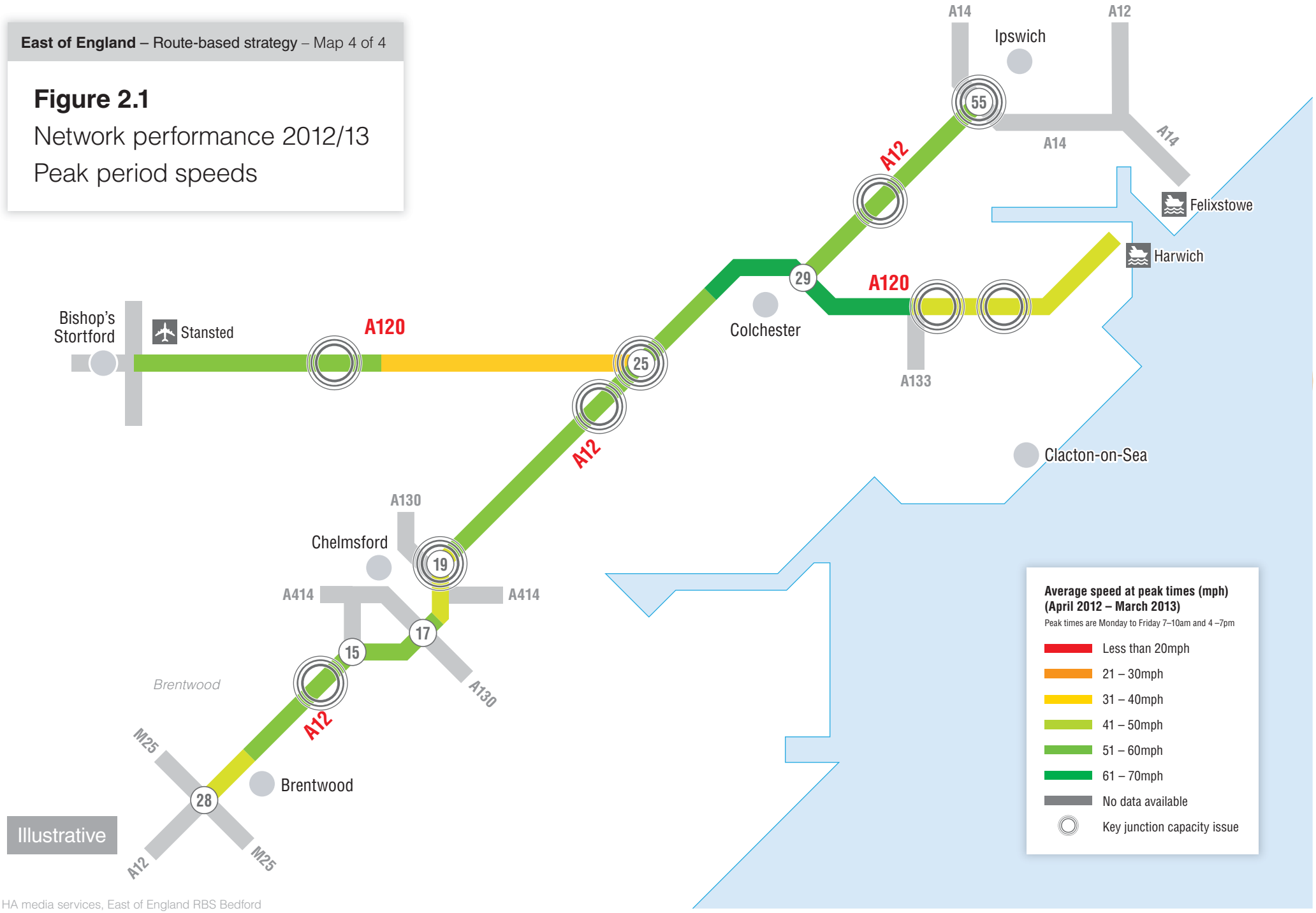
Network performance 2012/13

Peak period speeds



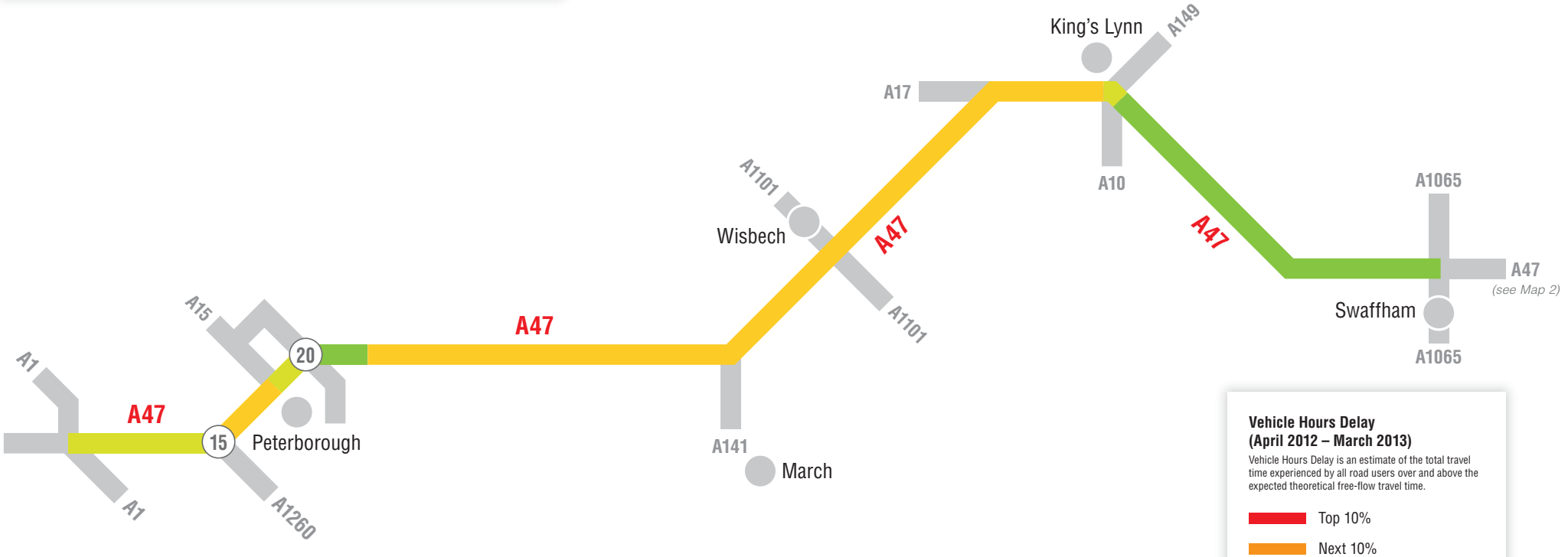
2.1.28 The strategic road network is key in promoting growth of the UK economy, and alleviating congestion can realise economic benefits.

2.1.29 Figure 2.2 shows the delay on our network compared with a theoretical free-flowing network.

Figure 2.2

Network performance 2012/13

Delay



Vehicle Hours Delay (April 2012 – March 2013)

Vehicle Hours Delay is an estimate of the total travel time experienced by all road users over and above the expected theoretical free-flow travel time.

- Top 10%
- Next 10%
- Next 20%
- Next 20%
- Next 20%
- Bottom 20%
- No data available

Explanation of the data can be found in the Technical Annex.

Illustrative

Figure 2.2

Network performance 2012/13

Delay

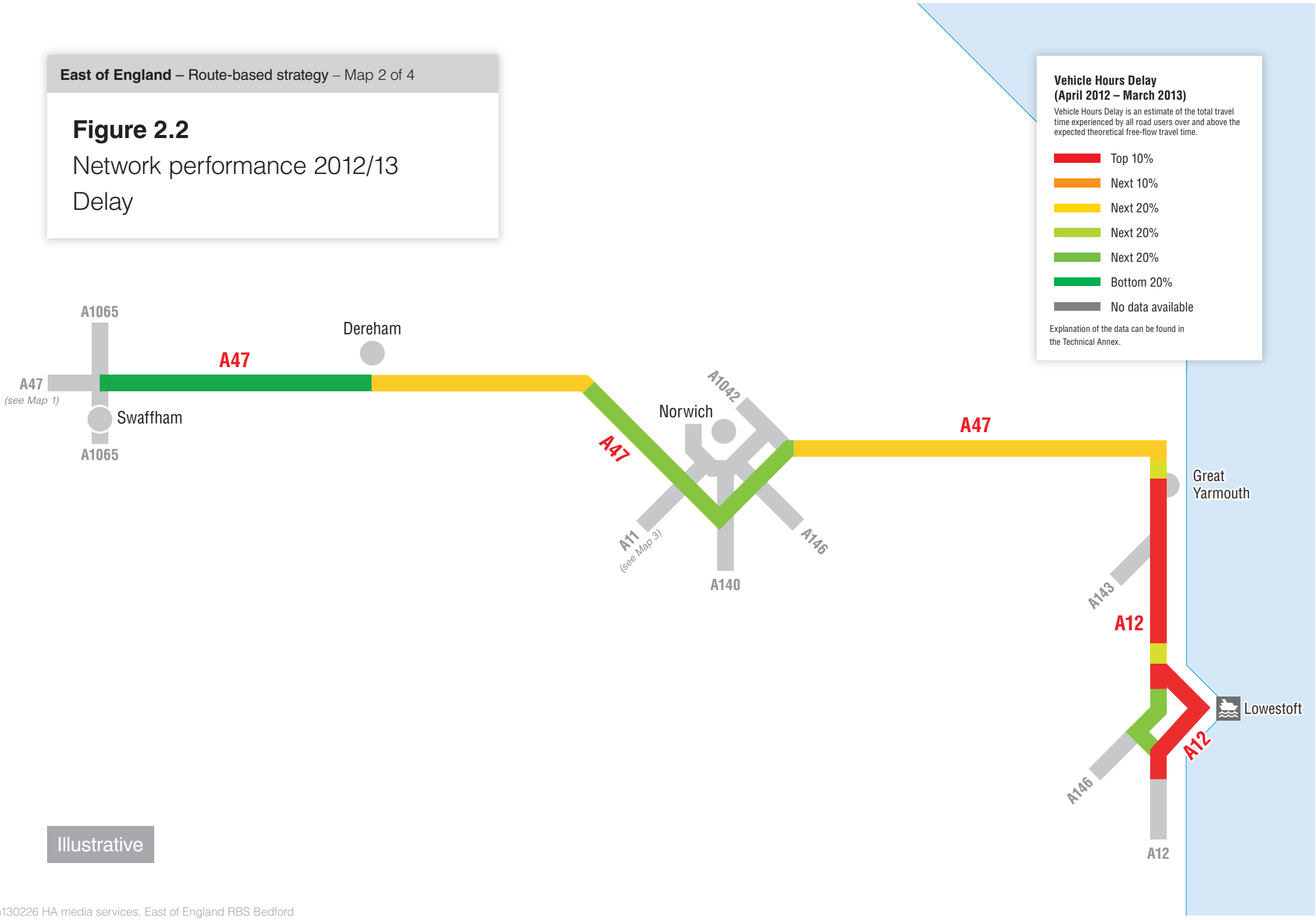


Figure 2.2

Network performance 2012/13

Delay

Vehicle Hours Delay
(April 2012 – March 2013)

Vehicle Hours Delay is an estimate of the total travel time experienced by all road users over and above the expected theoretical free-flow travel time.

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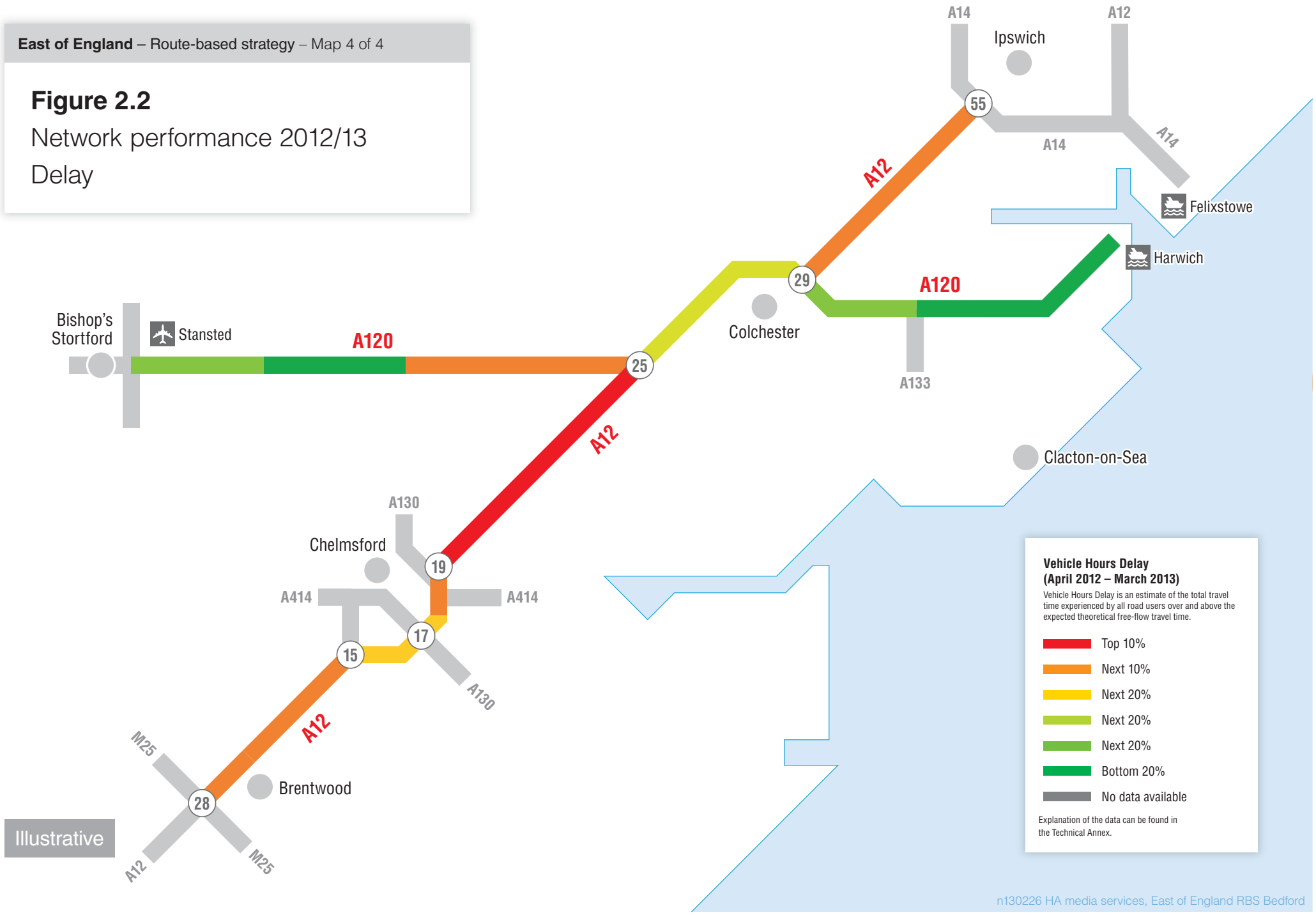
Illustrative

Figure 2.2

Network performance 2012/13

Delay



2.1.30 A large proportion of Route sections experience high or very high delays on a regular basis. The worst of these are focused mostly on the A12 and A120.

2.1.31 While safety is often expressed by users and stakeholders as the main concern along these parts of the route, their collision rates tend to be below the average for rural A-roads. Clear up times after incidents, however, significantly affects journey times, a major factors being the lack of alternative routes and variability in the standard of the road.

2.1.32 Having explained that alternative routes are limited, the route via A130 and A127 is used as an alternative route from Chelmsford to the M25 if an incident occurs in this section. However if an incident occurs on the A130/A127, then the pressure on the A12 increases because this then acts as the alternative for customers travelling from London to Chelmsford and further afield. The A120 west from Marks Tey to Braintree can also act as an alternative route; previous modelling using the East of England Regional model (EERM) demonstrated that it attracted significant strategic diversionary traffic but commented that is wholly unsuitable for the purpose.

2.2 Road safety

2.2.1 As a responsible network operator and through the *Strategic road network performance specification 2013-15*, the Highways Agency works to ensure the safe operation of the network.

2.2.2 By 2020, *The strategic framework for road safety 2011* forecasts the potential for a 40% reduction of the numbers killed or seriously injured on the roads compared with 2005-2009. We are working toward this aspirational goal.

2.2.3 Figure 2.3 illustrates the rates of injury accidents and the top 250 casualty locations on the strategic road network between 2009 and 2011. Injury accidents are collisions where people were injured and their injuries were slight, serious or fatal. Damage only incidents have not been included. The top 250 casualty locations have been calculated nationally, and are based on the number of casualties which occurred within a distance of 100m. Locations with the same number of casualties have been given a “joint” ranking and therefore, there may be some locations with the same rank number.

2.2.4 Between 2009 and 2011 there were 1,586 collisions on the Route. The number per year has ranged from 493 to 573 during this 3 year period, but there is no noticeable trend up or down.

2.2.5 Of the 1,586 collisions recorded, 54 (3.4%) included fatalities, 263 (16.6%) included serious injuries and the remaining 1,269 (80%) included only slight injuries. The number of fatalities appears to have increased across the 3 year period, with 10 in 2009 and 27 in 2011.

2.2.6 Within the 1,586 collisions there were 2,541 casualties, at a rate of 1.60 casualties per collision.

2.2.7 In terms of vehicles/road users involved in the collisions:

- 36.96% involved more than one vehicle;
- 4.85% of vehicles involved were HGV's;
- Where the age of drivers was known 6.41% were young drivers (aged 16-19); and
- 14.30% were older drivers (aged 60 or over).

2.2.8 The causation factors for accidents indicate that in the main driver error or behaviour were the main causes. A summary of the main factors are as follows:

- 12.16% occurred where the driver 'failed to look properly';
- 5.63% occurred where the driver 'failed to judge other person's path or speed';
- 4.09% involved 'loss of control';
- 3.90% cited 'slippery road';
- 3.35% were 'travelling too close';
- 2.79% cited 'Careless, reckless or in a hurry'
- 2.20% involved 'sudden braking';
- 0.94% were travelling too fast for conditions;

2.2.9 With only a few exceptions the collision risk on the A47 and A12 north is among the highest on the Route (a notable exception being A47 Norwich southern bypass). There are also a number of top-250 collision locations between Eye and Thorney in Peterborough, at King's Lynn, and on the A12 between Lowestoft and Great Yarmouth. The nature and circumstances of these are varied but will, in part, be related to the variable and inconsistent route standards.

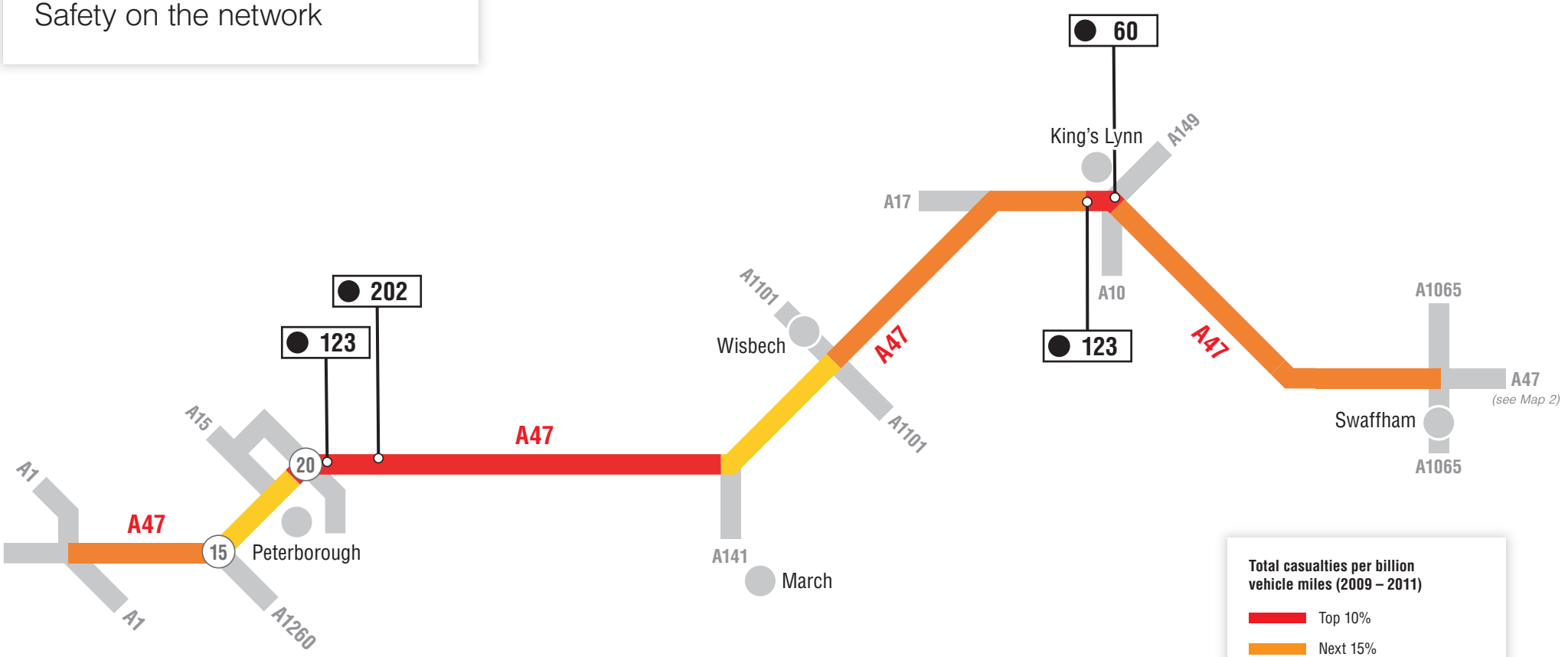
2.2.10 The A120 has similarly high collision risks on the section between Braintree and Mark Tey and east of the A133 Hare Green junction to Harwich. Both of these sections are mostly single carriageway with a mix of roundabouts and give way junctions, with both rural and urban sections. The Braintree bypass, which forms part of this section, is dual carriageway but has routinely congested at-grade roundabouts and serves a secondary function as part of the local A131 route. One of these roundabouts is also one of the top 250 casualty locations as are the give way junction on the Coggeshall bypass and the A12 Marks Tey junction.

2.2.11 The section of A12 between Colchester and Ipswich has high collision risk. This section is dual carriageway but has several give way junctions with central reserve gaps that contribute to this risk.

2.2.12 The A11 between Mildenhall and Thetford has a high collision risk. This section, however, is currently being widened to dual carriageway. There are nonetheless issues at the Fiveways roundabout at the southern end of this scheme, which is in the top 250 casualty locations. There is a commitment to monitor this following opening of the dualled section.

2.2.13 While we aim to reduce the numbers killed or seriously injured using and working on the SRN, we will always identify more safety interventions than our budget allows us to implement. We use a prioritisation process to help us and we review this regularly to ensure we are targeting the locations with the greatest opportunity to save lives and reduce the severity of injury.

Figure 2.3
Safety on the network



Illustrative

Figure 2.3
Safety on the network

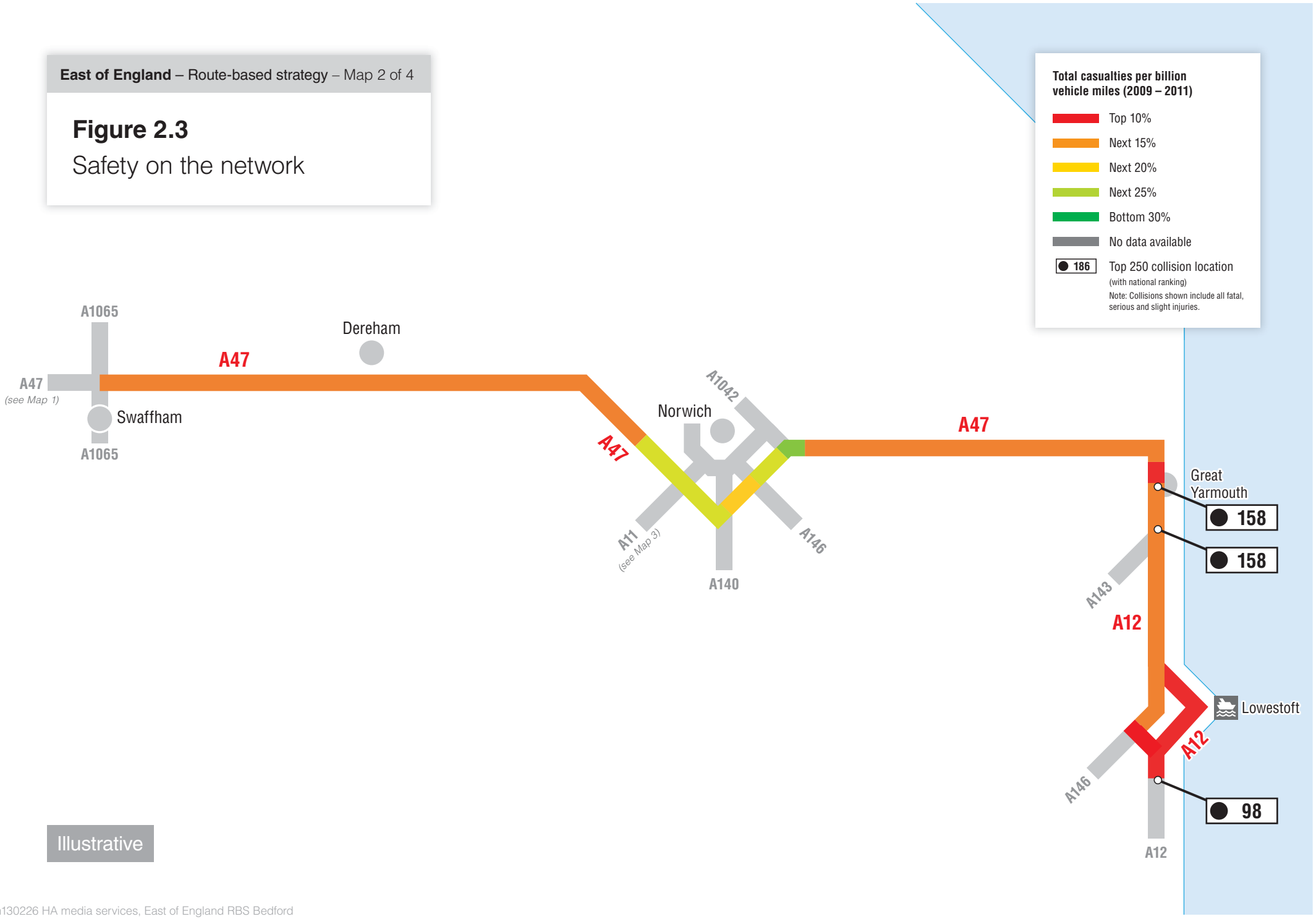


Figure 2.3
Safety on the network

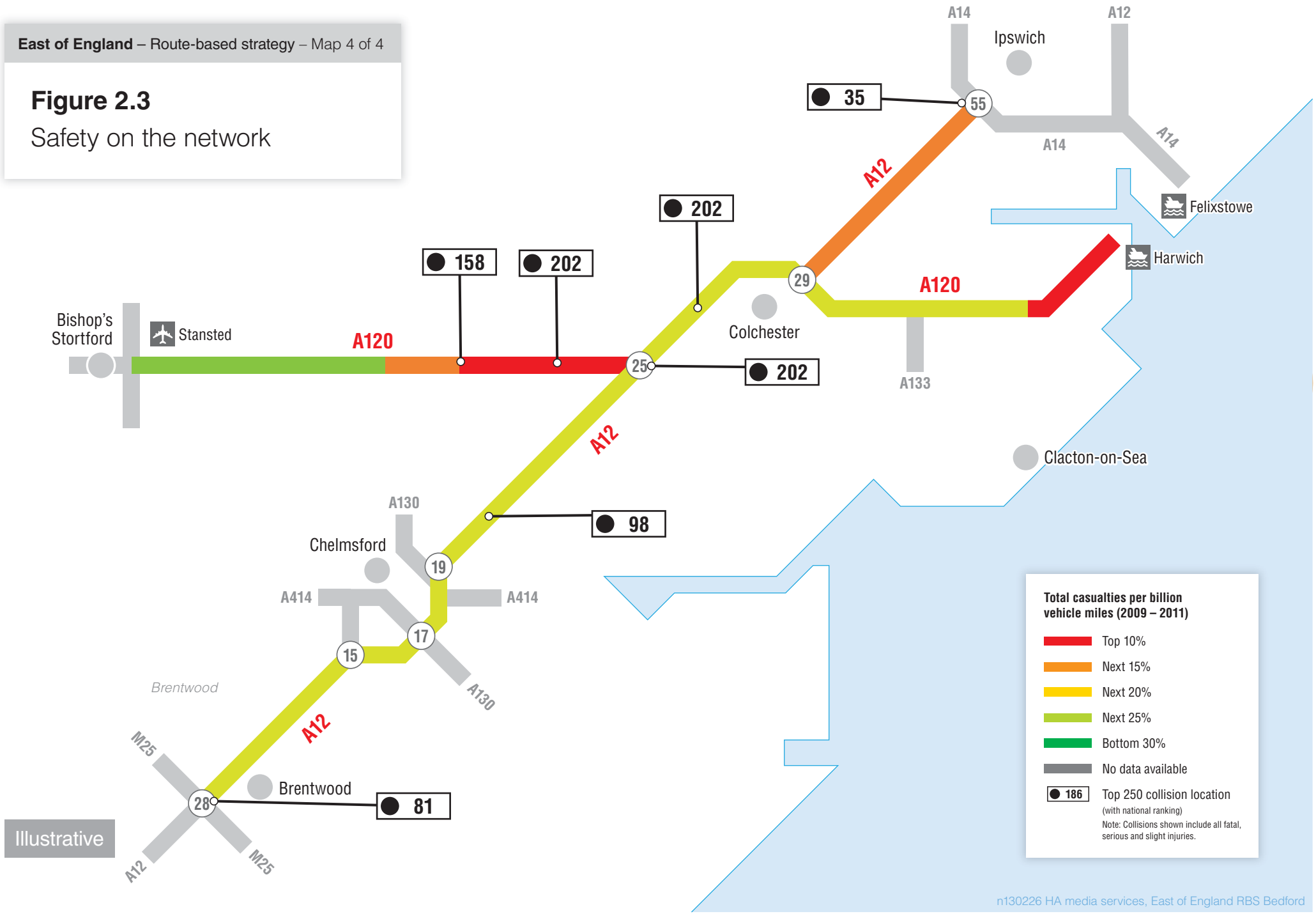
Total casualties per billion vehicle miles (2009 – 2011)

- Top 10%
- Next 15%
- Next 20%
- Next 25%
- Bottom 30%
- No data available
- 186 Top 250 collision location (with national ranking)

Note: Collisions shown include all fatal, serious and slight injuries.

Illustrative

Figure 2.3
Safety on the network



2.3 Asset condition

2.3.1 We carry out routine maintenance and renewal of roads, structures and technology to keep the network safe, serviceable and reliable. We also ensure that our contractors deliver a high level of service on the strategic road network to support operational performance and the long-term integrity of the asset.

2.3.2 From new, assets have an operational 'life' within which, under normal conditions and maintenance, the risk of failure is expected to be low. Beyond this period, the risk of asset failure is expected to increase, although for many types of asset the risk of failure remains low and we do not routinely replace assets solely on the basis that they are older than their expected operational life. We use a combination of more regular maintenance and inspection along with a risk-based approach to ensure that assets remain safe while achieving value for money from our maintenance and renewal activities.

2.3.3 We maintain a National Asset Management Plan as an annual summary of the Agency's network asset inventory and condition. It is aimed at ensuring there is sight of future issues affecting the asset and enabling strategic decision making.

Carriageway Surface

2.3.4 The road surface on the strategic road network is primarily surfaced with two types of flexible bituminous materials, namely Hot Rolled Asphalt (HRA) which has an approximate design life of 25 years and Thin Surface Course System (TSCS) with a lower construction cost and shorter design life of 10-15 years. Large tranches of HRA were laid in the 1990s and TSCS tranches laid in the 2000s resulting in a significant proportion of the network reaching the end of its design life by 2020.

2.3.5 It should be noted that, although carriageway surfacing may be identified as reaching or exceeding its design life, the surfacing will not necessarily require treatment at this point. Carriageway surfacing that is beyond its design life is at a higher risk of failure, with such risk increasing the further that the surfacing exceeds its design life. The increasing age of the surfacing could manifest in an increased frequency of maintenance interventions which, if a renewals scheme is not funded, may result in a higher cost both financially and in terms of disruption to road users to maintain the asset in a safe and serviceable condition.

2.3.6 We also have concrete road surface material but this is only a very small proportion when compared to the length of flexible road surfaces. The amount of concrete road surface is also reducing as it is replaced by flexible material at the end of its serviceable life. Concrete is not a material we now use in new carriageway construction on any of the motorway and trunk road network.

2.3.7 That said, the East of England has a generally higher proportion of concrete surfacing than other regions. There are lengths of concrete carriageway on the A11 in Norfolk, A12 in Essex and A47 in Norfolk.

2.3.8 Almost two-thirds of the A47 is expected to be at or near the end of its design life by 2020, along with over one-third of the A11, around a half of the both A12 and A120.

Structures

2.3.9 There are a number of high profile structures with unique challenges on the route:

2.3.10 **Lowestoft Bascule Bridge**. Since the completion of a mechanical and electrical refurbishment in 2009, Lowestoft Bascule Bridge has experienced a number of major mechanical and electrical defects. Most of these have now been corrected. However, the Hydraulic Drive Units which are the motors that lift the bridge need to be replaced.

2.3.11 **A138 (former A12) Chelmer Viaduct**. The Highways Agency still maintains the Chelmer Viaduct in Chelmsford, an unintended legacy of detrunking at the time of building the Chelmsford Bypass. The viaduct which was built in 1929 is in very poor condition. Works to replace the structure are planned to start in Summer 2014 and be completed by the end of 2015.

2.3.12 **Breydon Bridge**. This carries the A12 over Breydon Water in Great Yarmouth. The bridge is now approaching 30 years old. Sourcing replacement parts for the control system and mechanical components is becoming more difficult as these parts now have to be individually manufactured. Many of these parts will need to be replaced during the next few years with modern components which can be more easily maintained.

Other key asset issues for routes

2.3.13 Changing weather patterns will have a significant effect on precipitation levels, posing a challenge in future years for the drainage asset. The trunk road sections have no hard shoulder which makes maintenance or investigative work on drainage assets resource intensive and disruptive to traffic.

2.3.14 Where Tensioned Corrugated Beam (TCB) safety fence is provided we are increasing finding that they are approaching the end of their theoretical design life. This is a particular issue on the A12 but is increasingly in need of closer scrutiny and remedial measures across the route.

2.3.15 The A12 Chelmsford bypass has a series of geotechnical defects that are being prioritised for future maintenance.

2.4 Route operation

Incident management

2.4.1 We work hard to deliver a reliable service to customers and to reduce the number and impacts of incidents on road users.

2.4.2 Across the whole network, the Highways Agency Traffic Officer Service responds to around 20,000 incidents each month. We measure how effective we are at managing incidents by looking at the time incidents affect the running lanes.

2.4.3 We have a good understanding of the types of incidents which are quick to clear up and those which take longer. In general, there are far more incidents which don't affect the running lanes for very long, and mostly these are caused by breakdowns in the live lanes, debris or damage only collisions. The longest duration incidents are mostly caused by infrastructure issues, such as road surface repairs, bridge strikes, barrier collisions and spillages.

2.4.4 We continue to work with our partners in the emergency services to reduce the impacts on our network from serious collisions and long-duration incidents.

2.4.5 The Traffic Officer service (TOS) covers primarily the motorway network and a limited number of all purpose route sections. As such, only very short section of this route where they adjoin the M11 and M25 receive any routine patrols by the TOS. Incident management is coordinated by the East Regional Control Centre (ERCC) at South Mimms and the Agency's maintenance contractors provide an incident response and management function in cooperation with the local highway authorities, police and other emergency services. Records of, and statistics relating to, incidents differ in detail within these organisations and therefore direct comparisons with TOS patrolled routes are not possible.

2.4.6 The A12 Bascule Bridge in Lowestoft and Breydon Bridge in Great Yarmouth are both structures with mechanisms which render them vulnerable to incidents, which are subject to specific contingency plans between the local highway authorities, Police and the ERCC.

Flooding

2.4.7 We have a responsibility to reduce flooding. Flooding of the HA network impacts upon network performance and the safety of road users. Flooding off the network has an impact on third parties living adjacent to the network. .

2.4.8 Based on recorded flooding incidents, we have identified those parts of the network that are at risk of repeated flooding. There are, however, no significant location on this route.

Severe Weather

2.4.9 The HA aims to minimise where possible the impacts of severe weather, ie strong winds and snow, on network performance and the safety of road users.

2.4.10 Sea port operations are particularly susceptible to severe weather and can cause difficulties especially for traffic arriving at the port. This can be an issue for the A120 approaching Harwich where sailings are occasionally suspended due to adverse weather but there are smaller but growing ports at Lowestoft and Great Yarmouth for which this could become a more significant issue in future years.

2.4.11 The bascule bridge on the A12 at Lowestoft has been flooded by exceptionally high tides rendering the rise mechanism temporarily inoperable while emergency maintenance is undertaken. Happily, this is rare but it did occur as recently as December 2013.

2.5 Technology

2.5.1 The Highways Agency works hard to deliver a reliable service to customers through effective traffic management and the provision of accurate and timely information. We provide information to our customers before and during their journeys.

2.5.2 We monitor key parts of our network using CCTV and use sensors in the road to monitor traffic conditions. These are used by our National Traffic Operations Centre and seven Regional Control Centres to provide information to customers before their journeys, eg on the Traffic England website or through the hands-free traffic app for smartphones. Whilst on the network, we also inform our customers using variable message signs (VMS).

2.5.3 Technologies such as overhead gantries, lane specific signals and driver information signs also forms part of how we can operate our network efficiently. In some locations we have controlled motorways, which is where we can use variable mandatory speed limits to help keep traffic moving. Smart motorways use both variable mandatory speed limits and the hard shoulder as an additional live traffic lane during periods of congestion. Ramp metering manages traffic accessing the network via slip roads during busy periods to help avoid merging and mainline traffic from bunching together and disrupting mainline traffic flow.

2.5.4 On routes in the East of England RBS, however, technology is limited in coverage and scope with only partial provision of closed circuit TV (CCTV) and variable message signs (VMS), but no motorway incident detection and automatic signalling (MIDAS) nor ramp metering sites. The A11 currently has no CCTV and only has VMS on its approaches to the A14. The A12 has CCTV coverage at key locations and has VMS at Colchester, Chelmsford and at its approaches to the A14 and M25. The A47 has no VMS and has CCTV only at Eye and at Guyhirn. The A120 has only 3 CCTV cameras and VMS only at its approach to the M11. Full details are listed in the technical annex section C.

2.5.5 There are some known gaps in CCTV coverage at several major junctions on both the A47 and A120.

2.6 Vulnerable road users

2.6.1 There are a number of route sections where pedestrians and cyclist facilities are a particular concern, especially where routes cross or run adjacent to communities.

2.6.2 The A12 Yarmouth Road in Lowestoft is a barrier to many local journeys, there is only one primary school east of the A12 Yarmouth Road and this is served by the National Cycle Network (NCN) route 1 North, all the other schools are on the western side of the road. There is felt to be a need for new cycle facilities.

2.6.3 The A47 bisects communities at Middleton, East Winch and Little Fransham. A signalised crossing has recently been installed at Middleton, but there are no other such crossing facilities on the route.

2.6.4 The A12 between M25 and Ipswich has a number of such locations. For instance:

- There are no cycle facilities south of Hatfield Peverel
- There are no cycle facilities on Witham and Kelvedon bypasses.

2.6.5 At other locations the facilities are either inadequate or poorly maintained or both. Crossing points are also inadequate at these locations.

2.6.6 There are several perceived weaknesses in cycling provision along the A47 particularly on the eastern sections. The existing path and crossing of the Yare viaduct alongside the A47 to its junction with the A1042 and the park & ride facility at Postwick east of Norwich is considered to be inadequate as it cannot accommodate two-way cycling.

2.6.7 The A120 east of Braintree is also poorly served by VRU facilities especially where it passes directly through communities such as Mark Tey. Further information regarding stakeholder concerns about walking and cycling can be found in section A2 of the technical annex.

2.7 Environment

2.7.1 As a responsible network operator and through the *Strategic road network performance specification 2013-15*, the Highways Agency works to enhance the road user experience whilst minimising the impacts of the strategic road network on local communities and both the natural and built environment.

Air quality

2.7.2 We recognise that vehicles using our road network are a source of air pollution which can have an effect on human health and the environment. We also appreciate that construction activities on our road network can lead to short-term air quality effects which we also need to manage.

2.7.3 The Highways Agency is committed to delivering the most effective solutions to minimise the air quality impacts resulting from traffic using

our network. We will operate and develop our network in a way that works toward compliance with statutory air quality limits as part of our broader Environmental Strategy.

2.7.4 Air quality is particularly sensitive in a number of locations along the route where Air Quality Management Areas (AQMAs) have been declared at:

- A12 Lucy Lane Stanway
- A12 close to the M25 at Brentwood

Cultural heritage

2.7.5 Wherever possible, balanced against other factors, Agency schemes are designed to avoid impacts on cultural heritage assets.

2.7.6 Areas of cultural heritage sensitivity associated with this route are:

- near the A11, north of Thetford
- adjacent to the A47, south of Norwich
- on the northern side of the A47, between King's Lynn and Swaffham
- north of Colchester, adjacent to the A12

Ecology

2.7.7 The Agency's activities, including road construction projects and maintenance schemes, have the potential to impact on protected sites, habitats and species. We aim to minimise the impact of our activities on the surrounding ecology and wherever possible contribute to the creation of coherent and resilient ecological networks by maximising opportunities for protecting, promoting, conserving and enhancing our diverse natural environment.

2.7.8 Key ecological designation areas through which the route passes are:

- A11 between A14 and Thetford
- alongside the A47 Acle Straight approaching Great Yarmouth

Landscape

2.7.9 Roads and other transport routes have been an integral part of the English landscape for centuries. However, due to large increases in traffic, combined with modern highway requirements, they can be in conflict with their surroundings. We are committed, wherever possible, to minimise the effect of our road network on the landscape.

2.7.10 Key areas of landscape sensitivity through which the route passes are:

- A11 between A14 and Thetford
- A47 northeast of Swaffham
- A47 between A1075 and A140 junctions
- A47 between A1064 junction and Great Yarmouth

- north of the A120 in Harwich
- north of A12/A120 Ardleigh interchange at Colchester

Noise

2.7.11 Traffic noise arising from the Highways Agency's network has been recognised as a major source of noise pollution.

2.7.12 We take practical steps to minimise noise and disturbance arising from the road network. This includes providing appropriate highway designs and making more use of noise reducing technologies.

2.7.13 In 2012, Defra completed the first round of noise mapping and action planning which identified the top one per cent of noisiest locations adjacent to major roads. These were based on the conditions in 2006. The locations in this top one per cent are known as Important Areas.

2.7.14 These are at:

- Parts of A47 through Peterborough
- A12/A120 Ardleigh interchange at Colchester
- A12 near junction 26 Eight Ash Green west of Colchester,
- Sections along the A12, northeast and southwest of Chelmsford

Water pollution risk

2.7.15 We have a duty not to pollute water courses and ground water. We have identified those highway discharge locations across our network where there is an existing potential water pollution risk.

2.7.16 Areas of water pollution risk identified on the East of England route are as follows:

- Several sites on A47 between A16 at Eye and A141 at Guyhirn
- Several sites on A47 between King's Lynn and Swaffham
- Parts of A47 Norwich southern bypass
- Several sites on A12 south of Great Yarmouth
- Sections of the A120 between A133 Hare Green junction and Harwich

3 Future considerations

3.1 Overview

3.1.1 There is already a lot known about the planned changes to and around the route. Local authorities and the development community are already pushing forward the delivery of their housing and economic growth aspirations, as set out in their local plans. The Highways Agency has a large programme of schemes it has to deliver, plus an even larger programme of pipeline measures that could come forward after the general election. Local authorities, together with port and airport operators, are progressing measures to improve the operation and performance of their transport networks and facilities.

3.1.2 All of these issues have the potential to directly influence the ongoing performance and operation of the route. Figure 3 summarises the anticipated key future issues and the following sections summarise those issues in more detail.

Figure 3

Key future considerations for the route

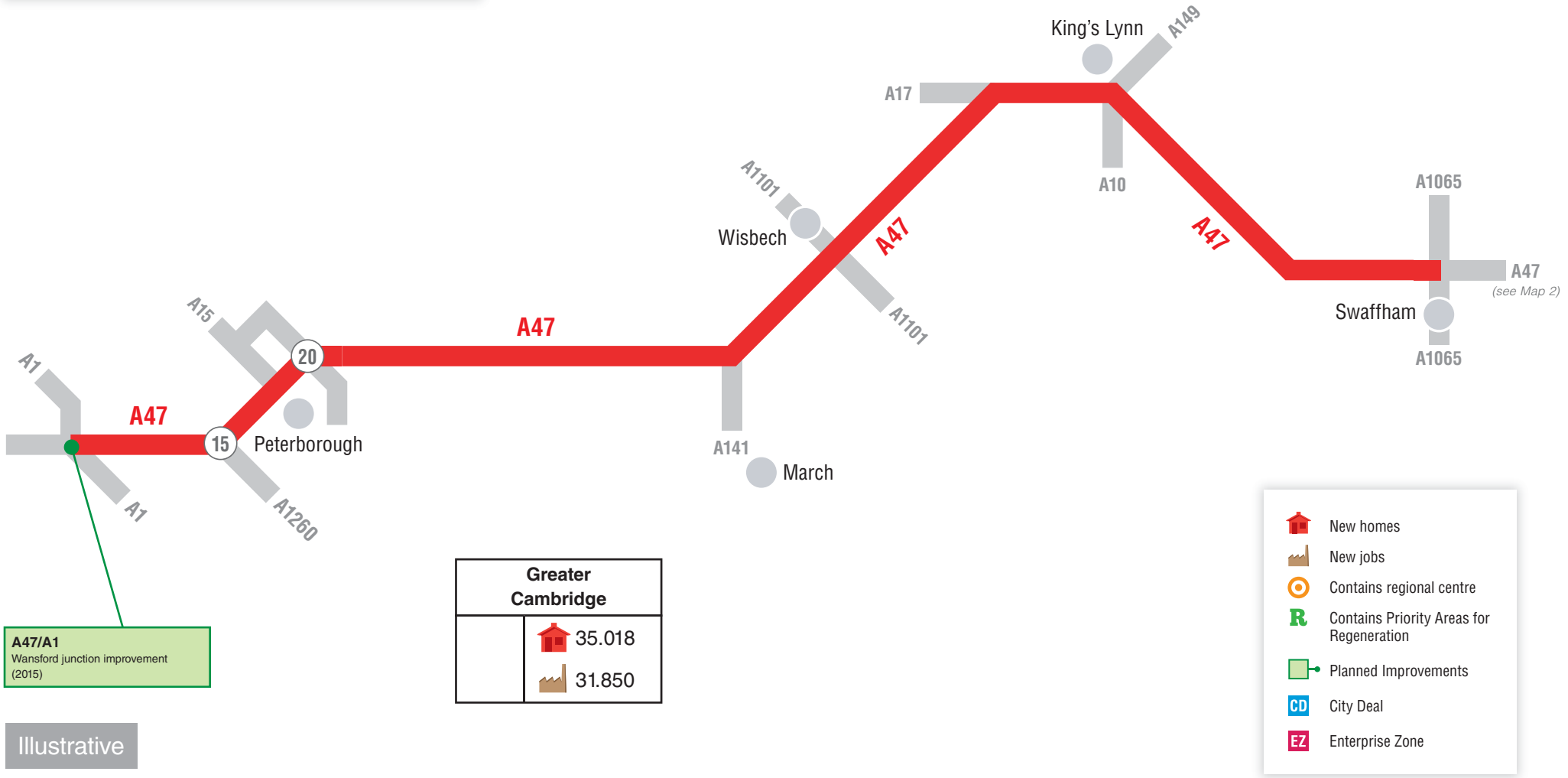
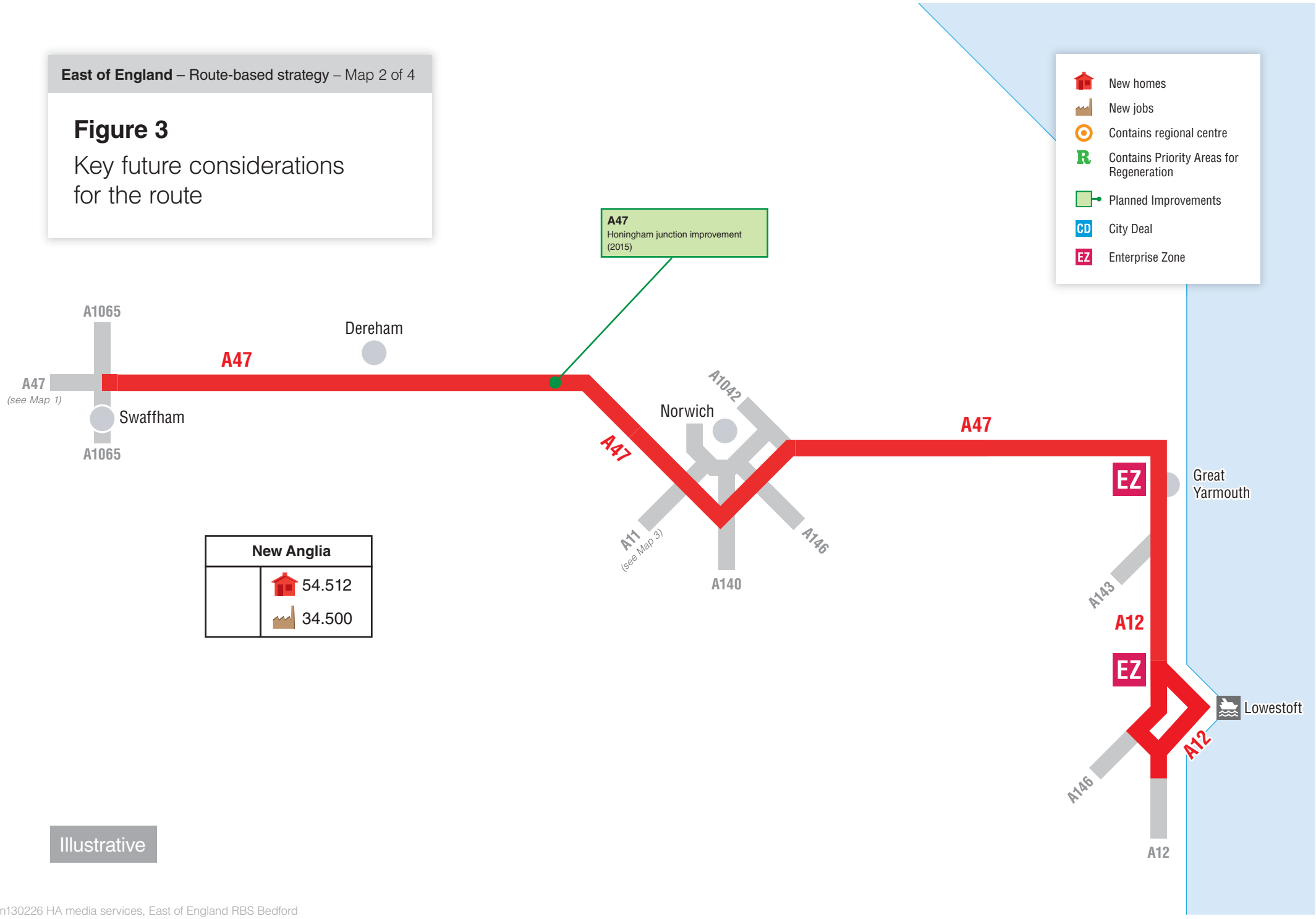


Figure 3

Key future considerations for the route



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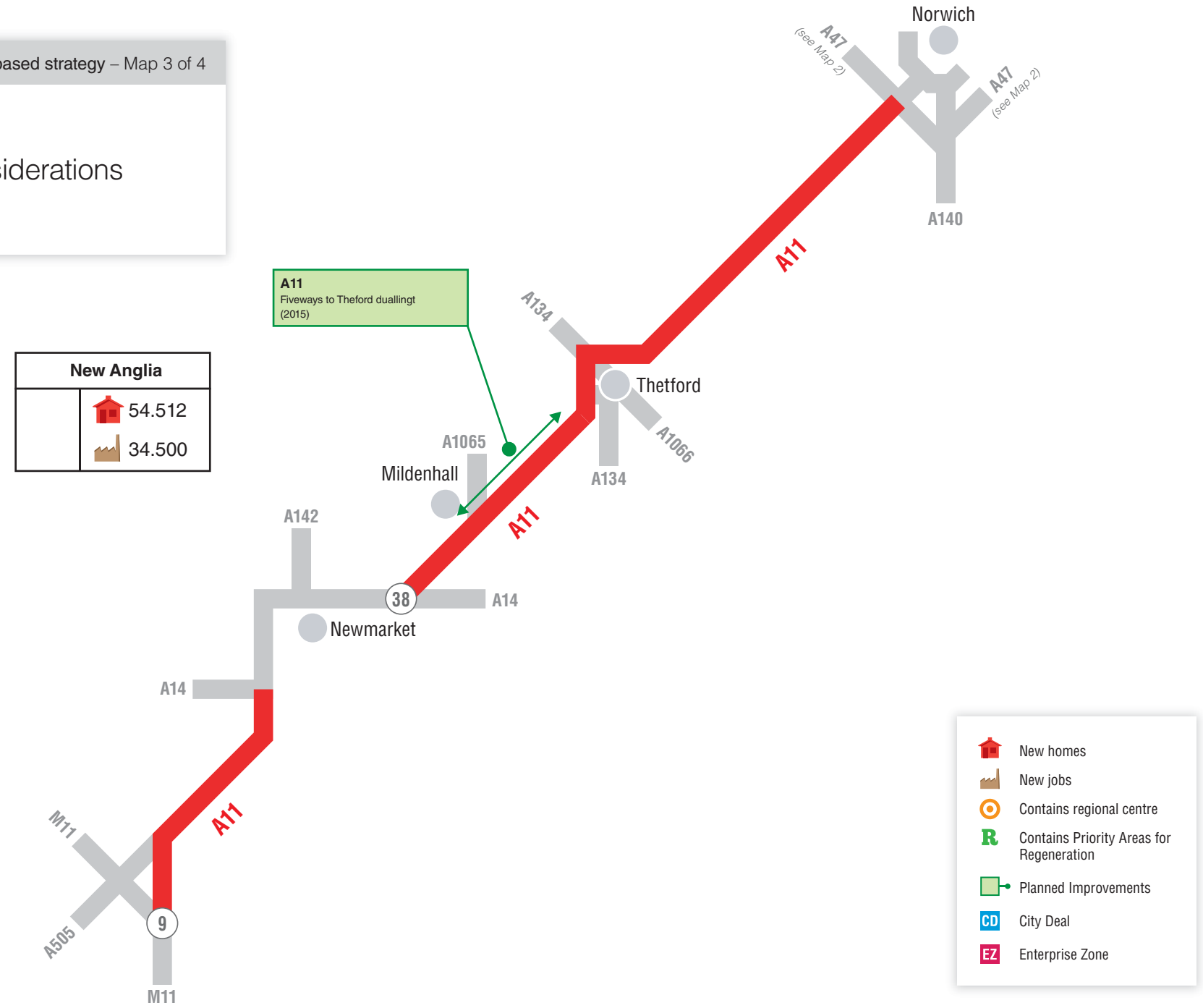
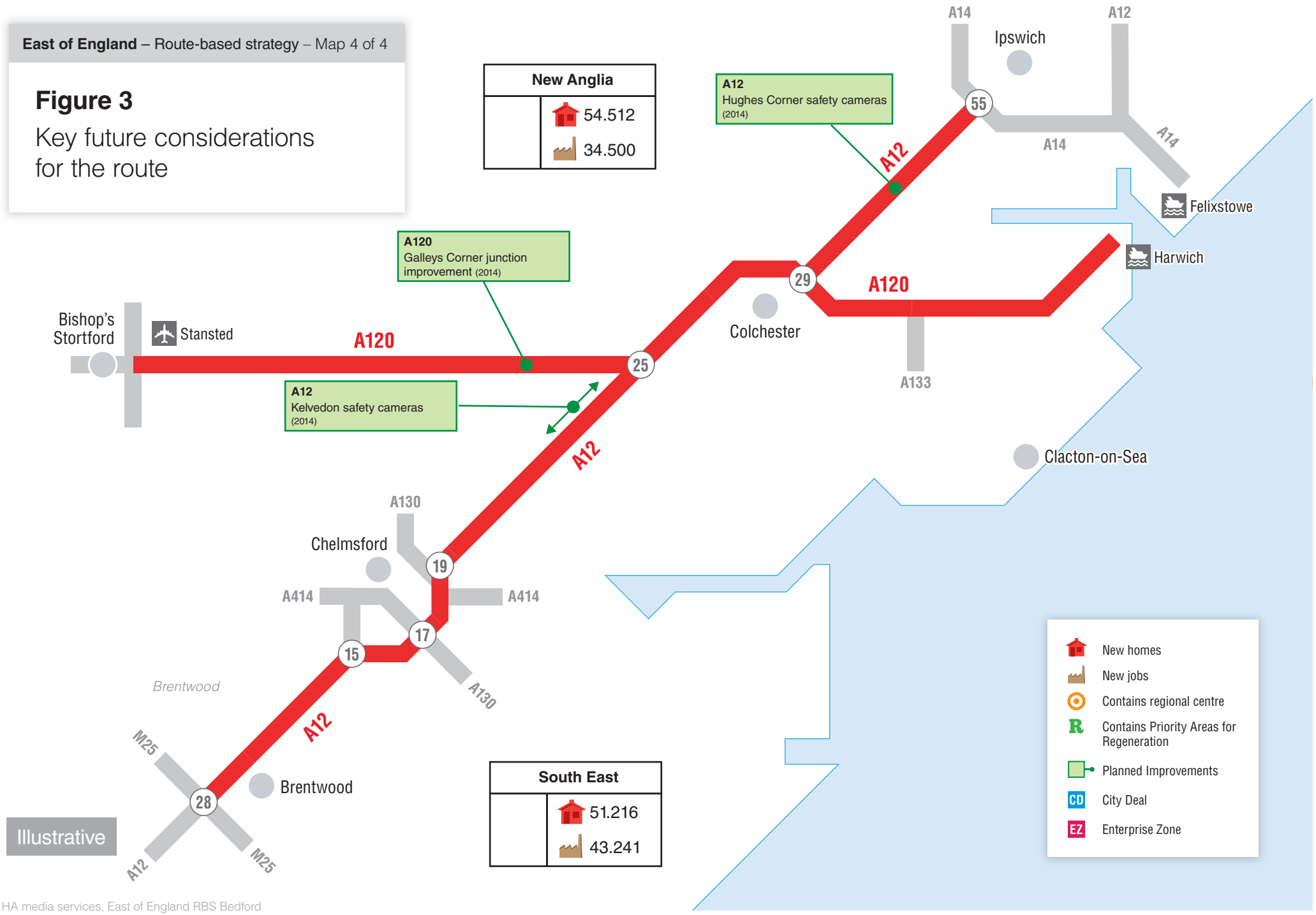


Illustrative

Figure 3

Key future considerations for the route



3.2 Economic development and surrounding environment

3.2.1 A key aspect of managing the route effectively will be ensuring that it is capable of supporting future local housing and economic growth aspirations. This will involve preparing the route through effective management and public investment to be in the best possible position to cater for the planned demands placed upon it, whilst ensuring that the developments themselves effectively mitigate their local impacts.

3.2.2 Figure 3 summarises the known key housing and economic growth aspirations that would impact on the route, with Table 3.1 below providing more context about some of those key developments the nature, scale and timing of the proposals.

Table 3.1 Key housing and economic growth proposals

Location of Development	Development Type	Scale by 2015	Scale by 2021	Scale by 2031	Anticipated Location of Impact on Route
Thetford Sustainable Urban Extension, Breckland	Residential Commercial	Not known Not known	Not known Not known	5,000 units 5,000 jobs	A11 Thetford bypass junctions
South of Attleborough Urban Extension, Breckland	Residential Commercial	Not known Not known	Not known Not known	4,000 units 2,000 jobs	A11 Attleborough bypass junctions
West of Mile End Road, Colchester	Residential	0 units	2,857 units	4,000 units	A12 Junctions 28 & 29
Stanway	Residential	0 units	1,000 units	1,800 units	A12 Junction 26
Beaulieu Park, North of Chelmsford	Residential Commercial	Not known Not known	Not known Not known	3,600 units 62,300sqm	A12 Junction 19
Norwich Research Park expansion	Commercial	Not known	Not known	100,000sqm / 50ha	A47/A11 Thickthorn Interchange, A47/B1108 Watton Rd junction, A47/A1074 Longwater Interchange
Rackheath, Old Catton, Sprowston and Thorpe St Andrew, Norwich	Residential Commercial	995 units Not known	3,770 units Not known	10,000 units Not known	A47 Postwick Interchange

3.2.3 There are growth hot spots at several locations along the route, including Chelmsford and Colchester (A12), Breckland (A11), Norwich (A11 and A47) and Great Yarmouth (A47 and A12). In practice, all of these could be constrained by the ability of the route to accommodate additional trips. Great Yarmouth and Lowestoft contain Local Enterprise Zones. City Deals have been agreed for Cambridge and Norwich.

3.2.4 While the areas of Colchester and Chelmsford are recognised as key focal points of current/future growth in the corridor, several smaller communities are, nonetheless, expected to experience significant growth. Cumulatively, this could also be constrained especially on the A12 and A120.

3.2.5 The A47 corridor has been the subject of intense local authority lobbying for major investment to support a broad range of growth proposals including those in or near Norwich.

3.3 Network improvements and operational changes

3.3.1 The Agency is already delivering a large capital programme of enhancement schemes nationally. This includes Major Schemes greater than £10m in value, plus smaller enhancement schemes including the current Pinch Point Programme. Table 3.2 below summarises the current committed enhancement schemes proposed along the route, which have also been represented on Figure 3.

Table 3.2 Committed SRN enhancement schemes

Location	Scheme Type	Completion Year	Anticipated Benefits
A11 Fiveways - Thetford	A11 widened to dual carriageway between Fiveways and Thetford.	2014-15	Capacity and safety benefits plus improved access to several major developments along A11 corridor and to Norwich
A12 Kelvedon	Pinch-point scheme: Average speed safety cameras	2014-15	Safety benefits and reduced incident-related disruptions
A12 Hughes Corner	Pinch-point scheme: Average speed safety cameras	2014-15	Safety benefits and reduced incident-related disruptions
A47 Honingham	Pinch-point scheme: Junction improvement	2014-15	Capacity and safety benefits plus improved access to several major developments along A47 corridor
A47 Wansford, Peterborough	Pinch-point scheme: Junction improvement	2014-15	Capacity and safety benefits plus improved access to developments along A47 and A1 corridors
A120 Galleys Corner	Pinch-point scheme: Junction improvement	2014-15	Capacity benefits and improved access to developments along A120 corridor
A120 Pellens Corner	Safety improvement	2014-15	Safety benefits and reduced incident-related disruption.

3.3.2 The 2013 Spending Review and subsequent report from HM Treasury Investing in Britain's Future referenced a series of potential new pipeline schemes for the strategic road network, as well as listing local transport schemes either completed, under construction or due to start before May 2015.

3.3.3 The report set out how more than £2 billion per year of funding form across transport, skills and housing budgets will be included in a Single Local Growth Fund (SLGF) to support investment in economic priorities and stimulate growth, with funding allocated to Local Enterprise Partnerships (LEPs). In addition, the government is bringing together European Union Structural and Investment funds for 2014 to 2020, with money allocated to LEPs across England. LEPs will be able to use SLGF funds to promote schemes on or affecting the strategic road network where it addresses their strategic priorities.

3.3.4 The HM Treasury report Investing in Britain's Future also promoted undertaking a number of feasibility studies that the government will undertake to inform potential future investment in highway improvements:

- A303/A30/A358 Corridor
- A1 North of Newcastle
- A1 Newcastle-Gateshead Western Bypass
- A27 Corridor (inc. Arundel and Worthing)
- Trans-Pennine routes
- Connectivity to Leeds Airport, including consideration of issues around the A657

In addition to these, the Secretary of State for Transport announced in August 2013 that the **A47/A12 Peterborough to Lowestoft** would also be added to this list.

3.3.5 These locations are notorious and long-standing hot spots and do not need to await conclusion of these evidence reports. These studies in effect expedite elements of the stage 2 phase of the RBS through the early investigation of specific interventions on these sections of the route. At stage 2, any results available from the feasibility study work will be considered in the context of the emerging strategy recommendations for the entire route, including maintenance, operations and any other enhancements deemed needed along the route, together with the timing of those needs.

3.4 Wider transport networks

3.4.1 The June 2013 report from HM Treasury Investing in Britain's Future also listed the local transport schemes either completed, under construction or due to start before May 2015. **Error! Reference source not found.** below lists the schemes from that report that will influence the ongoing operation of this route, plus any other funded local network commitments that will be delivered before 2021.

Project	Scheme Type	Completion Year	Anticipated Impacts on the Route
Ipswich Transport Fit for 21st century 2012-13	Mixed	2014-15	Likely to generate opportunities for modal shift including for A12 traffic to and from Ipswich
A12 J19 Boreham Improvement (developer funded	Road	Developer timetable	Facilitates efficient access to/from development to A12
Colchester Northern Approaches Stage 3	Road	2014-15	Likely to lead to change in flows on A12

3.4.2 Improving the Great Eastern Mainline (GEML) railway is a high priority for both the New Anglia and the South East Local Enterprise Partnerships. This is likely to have benefits for the A12 corridor as if closely parallels it between London and Ipswich. Another SELEP priority is a 'connectivity' package for Tendring Borough which would see better linkage to the A120 via the A133.

3.4.3 The inclusion of the A47 feasibility study was in the main due to the combined initiatives of the local highway authorities. It is probable that the study will encompass a range of complementary local highway improvement as a 'joined up' package of measures aimed at enhancing the overall performance of the A47 corridor in order both to accommodate and stimulate growth in New Anglia and Greater Cambridge/Greater Peterborough Local Enterprise Partnerships areas.

4 Key challenges and opportunities

4.1 Introduction

4.1.1 It is not possible to show all the challenges and opportunities identified in this evidence report. This chapter shows a selection based on those where our internal and external stakeholders viewed these as a priority and these are supported by evidence. A full list of all the identified challenges and opportunities are provided in the Technical Annex.

4.1.2 Figure 4 summarises some of the key issues and challenges that the route will experience during the 5 years from 2015, with the following sections and Table 4.1 explaining these issues and challenges in more detail.

Timescales

4.1.3 To understand the timescales of when the key challenges identified become critical and when opportunities on the route could be realised, the following definitions have been made in Table 4.1:

- **Short Term:** current
- **Medium Term:** before March 2021
- **Long Term:** not before 2021

4.1.4 These timescale categories provide a guide for informing when future intervention may be required to meet the anticipated future operational performance needs, or when interventions may be needed to help facilitate local housing and economic growth aspirations.

Local Stakeholder Priorities

4.1.5 Input from stakeholder and road user groups linked to the route have been used to inform the development of this evidence report. This included getting their views on what they deemed to be the priorities within their area and identifying their “top priorities” locally. This has been collated according to the route to which those views related.

4.1.6 Table 4.1 presents a summary of whether the challenges and opportunities identified were a priority for our stakeholders in their particular area. This exercise does not seek to prioritise the challenges and opportunities along the length of the route by trying to compare one issue against another, but reports the feedback from local discussions.

4.1.7 This picture of stakeholder priorities is subjective and has been informed by discussions regarding the top priorities locally at the stakeholder events, and in conversations with stakeholders who couldn’t attend the events.

4.1.8 We recognise that the picture we build through this categorisation will be influenced by the representatives and organisations we have engaged with, and that consequently we may not have achieved a statistically balanced view and certain priorities may not have been identified as a

"top priority". We will be conscious of the limitations of the reporting of stakeholder priorities as we move into the second stage of RBS.

4.2 Operational challenges and opportunities

4.2.1 The route's resilience is identified as a key challenge, particularly in response to incidents which could cause traffic to find alternative routes via local roads which are not suited to carrying heavy traffic volumes. The single carriageway sections of the A47 between Norwich and King's Lynn, and on the Acle straight through the Broads area are locations where this challenge is particularly acute.

4.2.2 Provision of reliable and useful information to motorists using the network has been identified as a key challenge, and how improved technology could be a useful device in the better management of traffic flows, particularly where traffic volumes are expected to increase in the future. The A12 was specifically identified in this respect.

4.2.3 This may be particularly pertinent in the Greater Norwich area where there is a significant amount of development expected to come forward, and the A11 and A47 will act as important arteries between new communities, for example around Wymondham, Easton and Rackheath, and Norwich City and other employment centres.

4.2.4 In terms of carrying out maintenance to the A12, this is particularly difficult to implement due to there being very few suitable diversion routes on either the county or strategic road networks for either planned or unplanned maintenance.

4.2.5 The responsibility for network incident management on the SRN in this region falls to the East Regional Control Centre (ERCC) at South Mimms. As well as the control room, ERCC manages a set of 24/7 operational outstations across the network.

4.2.6 Much of the network in this RBS does not form part of the routinely patrolled network, which is primarily focused on motorways, but the Agency's maintenance contractors provide incident management coverage, closely liaising with the Traffic Officer service (TOS) at South Mimms and with the police and emergency services.

4.2.7 The A12 Bascule Bridge in Lowestoft and Breydon Bridge in Great Yarmouth are both vulnerable structures which and subject to specific contingency plans between the local authorities, Police and the ERCC.

4.2.8 Stakeholders identified a need to redefine sections of the network. One was designating the A12 between Great Yarmouth and Lowestoft as the A47. Another was the re-trunking of both the A12 between Ipswich and Lowestoft and the A140 between Norwich and Needham Market.

4.2.9 A further known issue but not raised by stakeholders specifically is the poor local connectivity alongside the A120 east of Colchester to Hare Green. This may be resulting in growth opportunities being identified at locations further away from Colchester.

4.3 Asset condition challenges and opportunities

4.3.1 Maintaining and improving pavement condition on the A11 and A47 through Norfolk is identified as a key challenge, with these roads

expected to carry increased traffic flows in the future resulting from planned development growth. Poor pavement condition on some sections is identified as an existing issue which stakeholders felt should be addressed in the short term, with the A11/A47 Thickthorn Interchange highlighted as a particular location where poor pavement condition has affected the efficient operation of the junction.

4.3.2 A considerable amount of the A12 is made up of concrete pavements, the majority of which are typically between 40-50 years old and may require structural maintenance or surface treatment to remedy significant substandard texture and wet-skid resistance. Current work has focussed on repairing spalled and significantly cracked concrete to prevent further deterioration.

4.3.3 The condition of much of the Tensioned Corrugated Beam (TCB) safety fence is poor. Extensive lengths of this product were put up in the 1980's and much of it has been identified as nearing the end of its theoretical design life.

4.3.4 A12 Chelmsford bypass has a series of geotechnical defects that are being prioritised and managed through the forward and bidding programme.

4.3.5 At the A12 Braiswick lay-by (Colchester Bypass), continued settlement of the north and south bound road pavement has resulted in a number of resurfacing schemes. The lay-by is currently closed as a result of the defects.

4.4 Capacity challenges and opportunities

4.4.1 A number of capacity challenges have been identified, some which already occur and some are anticipated in the future.

4.4.2 Key nodes around Norwich, including the A47/A1074 Longwater Interchange, the A11/A47 Thickthorn Interchange and the A47/A1042 Postwick Interchange all currently experience congestion and are therefore a priority challenge to address in the short to medium term. Improvement measures are under consideration at all of these junctions to improve the operation of the network and accessibility to Norwich from surrounding existing as well as key growth proposals at Norwich Research Park, Broadland Gate, Hethel Engineering Centre and around Easton/Costessey and Rackheath.

4.4.3 Key nodes around King's Lynn, including the A47/A17 Pullover Interchange and the A47/A10/A149 Hardwick Interchange experience capacity issues and act as gateways to King's Lynn as well as facilitating the movement of longer distance traffic. Key development proposals in King's Lynn, as well as in surrounding towns including Wisbech, will be likely to generate additional traffic movements which could affect the capacity of the route. A challenge will be to deliver improvements to ensure the vitality of King's Lynn, towns such as Wisbech and the wider area is not inhibited.

4.4.4 Improvements are underway to the A11 between the Fiveways roundabout and Elveden which will improve journey times and make the

route a more attractive long-distance route, improving accessibility and connectivity between Cambridge, Norwich and beyond. Improvements will support local housing and economic growth aspirations within Forest Heath and Breckland authority areas as well as in neighbouring authority areas.

4.4.5 The A47 between the A1 and Sutton, west of Peterborough and the section between North Tuddenham and Easton, west of Norwich, both experience peak period congestion. Growth in Peterborough and in Norwich will exacerbate this condition.

4.4.6 A future challenge will be to ensure the A11 continues to operate efficiently and serve communities along the route, as well as fulfil an important strategic function (which will be greatly enhanced with the current improvement scheme), along with the addition of key developments around Newmarket, Mildenhall, Thetford, Attleborough, Wymondham and Hethersett.

4.4.7 The need for additional capacity on the A12 south of the A120 East will need to be examined in the light of growth proposals and the need to provide reliable journey times for freight using the Haven ports.

4.4.8 In addition to issues raised by stakeholders there are known capacity issues at a number of junctions along the route. These include A12 J's 17 & 18 Chelmsford, J19 Boreham, J26 'Eight ash Green', the at-grade roundabouts on the A12 between Lowestoft and Great Yarmouth, A47 junctions at Peterborough, Wisbech, King's Lynn and Norwich, and the at-grade roundabouts on the A120 at Marks Farm and Galleys Corner in Braintree.

4.5 Safety challenges and opportunities

4.5.1 An outline of the safety history of the route is set out in section 2.2 above. Further information is outlined in section B of the technical annex. It is clear that much of the A47 and a significant proportion of both the A12 and the A120 are of great concern.

4.5.2 The A47 corridor is already perceived to be a barrier to growth, and growing demand for a route with significant substandard sections could lead to further deterioration of safety. Similarly, the eastern extent of the A120 corridor is likely to see further port traffic but wider growth aspirations are being limited: further demand could exacerbate the already poor safety record.

4.5.3 The A12 has a broad spread of casualty clusters with a wide range of characteristics. Cluster locations for the whole route have been identified and categorised in tables B1 and B2 of the technical annex.

4.6 Social and environmental challenges and opportunities

4.6.1 The route is used by regional bus and national coach services. A challenge will be to ensure that these services can operate efficiently and continue to attract passengers living in communities along the

route. It must be ensured that the impact of incidents and ongoing operational or capacity issues to bus services is minimised.

4.6.2 The A47 between King's Lynn and Norwich is one section which is used by bus services, where there is opportunity for improvements to the route to generate benefits the service reliability and attractiveness, with the potential to achieve modal shift for some journeys.

4.6.3 A key challenge will be to give appropriate consideration to the needs of non-motorised road users including cyclists as part of scheme improvements, and address existing or emerging severance issues to ensure communities are well connected including along the A12 in Lowestoft, and the A47 at villages including Middleton and East Winch.

4.6.4 Stakeholders were keen to see positive treatment of cycling as a general principle. In particular, a number of basic factors, positive and negative, were outlined:

- The SRN often creates significant barriers to movement. These barriers play a key role in making cycling and walking less viable.
- The SRN is often the most direct route. Adjacent cyclepaths can therefore provide the most direct cycling route. This is of particular relevance for cycling where journeys up to 5 miles are possible in 30 minutes
- Barriers to cycling created by the SRN can increase traffic on these for short journeys and increase congestion on local routes. Increasing the viability of cycling and walking can therefore contribute to reducing congestion, improving air quality and individual health through active travel. This can work out much cheaper than improvements for vehicles. The SRN is a precious & limited resource which need to be utilised for journeys that are not viable any other way.

4.6.5 There are a number of locations along the A12 where noise is a particular problem. These include Mountnessing, Brentwood and Ingatestone, all of which were identified by stakeholders as part of the A12/A120 RBS pilot.

Table 4.1 Schedule of challenges and opportunities

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
Network Operation	A47 Middleton to East Winch	**NO1:** Calls for capacity and safety enhancement: (also see **ME11**)	Yes				Yes	✓		
	A12 Bascule Bridge Lowestoft	**NO2:** Calls for capacity enhancement (form unknown, reduce time closed to traffic) : (also see **ME3**)					Yes	✓		
	A12 and A14	**NO3:** calls to improve VMS signage – Implement former technology schemes	Yes				Yes	✓		
Asset Condition	A47 and A11	**AC1:** Calls for Repairs to concrete carriageway	Yes	✓			Yes		✓	
	A12 generally, particularly Northbound between Chelmsford and Colchester	**AC2:** Calls for Pavement repairs	Yes	✓			Yes	✓		
Capacity	A47/A11 Thickthorn Interchange	**C1:** Calls for Junction Capacity Improvement *(Potential funding from developers)*	Yes				Yes			✓

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
	A120 Coggeshall /Earl's Colne road	**C2:** Calls for Junction Safety and Capacity Improvement Conversion of existing at-grade junction to roundabout	Yes				Yes	✓		
	A47 Wisbech Junctions	**C3:** Calls for Junction Capacity Improvements	Yes	✓			Yes			✓
	A47/A1074 Longwater Interchange	**C4:** Calls for Junction Capacity Improvements : *(Potential funding from developers)*	Yes	✓			Yes		✓	
	Lowestoft	**C5:** Calls for capacity improvement to river crossings : (also see **NO6**)					Yes		✓	
	A47/A12 Vauxhall Roundabout Gt Yarmouth	**C6:** Calls for capacity improvements	Yes				Yes		✓	
	A47/A15 Interchange	**C7:** Calls for Junction Capacity Improvements	Yes	✓			Yes	✓		
	A47 Kings Lynn bypass junctions	**C8:** Calls for Junction Capacity Improvements	Yes	✓			Yes	✓		
	A11 Fiveways	**C9:** Calls for Junction Capacity Improvement					Yes	✓		
	A12 J19 Boreham	**C10:** Calls for Junction Capacity Improvement: (Potential for developer contributions)	Yes	✓			Yes	✓		
	A12 J17 Chelmsford	**C11:** Calls for Junction Capacity Improvement	Yes				Yes	✓		
	M11 J8 Bishop's Stortford	**C12:** Calls for Junction capacity improvements	Yes				Yes	✓		
	A47 Middleton to East Winch	**C13:** Calls for capacity and safety enhancement: (also see **NO5**)	Yes				Yes		✓	
	A12 J18 Chelmsford	**C14:** Calls for Junction Capacity Improvements	Yes	✓			Yes	✓		

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
	A47/A11 Thickthorn Interchange	**C15:** Calls for Junction Capacity Improvement. Add third level to the interchange to provide additional grade separation :	Yes			✓	Yes			✓
	A47 Easton to Tuddenham	**C16:** Calls for Link Capacity Improvement.:	Yes				Yes			✓
	A12 South of Chelmsford	**C17:** Calls for capacity improvement	Yes			✓	Yes			✓
	A120 Braintree to A12 Marks Tey	**C18:** Calls for Road widening to dual 2 carriageway				✓	Yes			✓
	A12 Between Colchester and Chelmsford	**C19:** Calls for Link capacity improvement				✓	Yes		✓	
	A47 Around Swaffham, Dereham and Honingham also Blofield – north Burlingham	**C20:** Calls for Road widening to dual 2 carriageway. Remove inconsistent highway layout, varies between dual/single	Yes			✓	Yes			✓
	Lowestoft	**C21:** Calls to Improve connectivity and general capacity issues (also see **OT2, C5** and **C22**)					Yes		✓	
	Lowestoft	**C22:** Calls to Improve access to Lowestoft and Gt Yarmouth (also see **C21, C5** and **OT2**)					Yes	✓		
	A11 Thetford Bypass	**C23:** Calls for Link / junction capacity enhancement: *(Potential funding from developers): (Could be phased as a series of medium enhancements)*	Yes	✓			Yes	✓		

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
	A47 whole route	**C24 (ii):** Calls for Link capacity resilience improvement (also see **C15, C16, C20, C3, C4, C6, C6, C11** and **C**) *(Could be phased as a series of large and medium enhancements)*	Yes					✓		
	A47/A11 Postwick Interchange	**C25:** Calls for Junction Capacity Improvement. *(Planned)*	Yes					✓		
	A12 around Chelmsford	**C26:** Calls for capacity Improvements						✓		
	SRN around Cambridge A14, M11 and associate junctions	**C27:** Calls to Improve capacity and access *(A14 Huntingdon to Cambridge Improvement planned)*	Yes				Yes	✓		
	A12 Witham bypass	**C28**: inconsistent mix of standards	Yes		✓	✓	Yes (A12/A120 pilot RBS)			
	A12 Rivenhall (unnumbered between J22 & J23)	**C29**: slip road: substandard, dangerous and very busy;	Yes			✓	Yes (A12/A120 pilot RBS)			
	A12 J23-24 Feering	**C30:** old standard dual carriageway	Yes			✓	Yes (A12/A120 pilot RBS)			
	A12 J26 Eight Ash Green	**C31** insufficient capacity for proposed growth & no credible process for developers to mitigate	Yes		✓		no			
	A12 Lowestoft to Great Yarmouth	**C32:** lack of capacity at at-grade roundabouts	Yes			✓	no			
	A120/M11J8 Bishop's Stortford	**C33**: junction capacity improvements needed	Yes		✓		Yes		✓	

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
	A120 Marks Farm to Galleys Corner, Braintree	**C43:** junction capacity improvements needed	Yes		✓	✓	no			
Safety	A12 Junctions 20a and 20b (Hatfield Peverel)	**S1:** Calls for Safety enhancements	Yes				Yes	✓		
	A47 Acle Straight	**S2:** Calls for Safety Improvement	Yes				Yes			✓
	A47 Between A1 and Sutton	**S3:** Calls for safety improvement	Yes	✓			Yes		✓	
	A12 J30, J31, and J32a (Colchester to Ipswich)	**S4:** Calls for Junction safety improvements	Yes				Yes		✓	
	A120 east of Colchester lane reduction from two to one	**S5:** Calls for Link safety improvements	Yes	✓			Yes	✓		
	A12 and A120 (east)	**S6:** Incidents involving left hand drive vehicles from ports		✓			Yes (A12/A120 pilot RBS)			
Social and environment	A47 and A11	**SE1:** Calls for Improvements to journey time reliability	Yes	✓			Yes		✓	
	Detrunked section of A11 following improvement scheme Fiveways to Thetford	**SE2:** Calls for Provision of cycleway and footway	Yes	✓			Yes	✓		

	Location	Description	Is there supporting evidence?	Timescales			Was this Identified through stakeholder engagement?	Stakeholder Priorities		
				Short-term	Medium-term	Long-term		Low	Medium	High
	A12	**SE3:** Calls to Reduce severance effects	Yes				Yes	✓		
	A12 Mountnessing	**SE4:** noise levels	Yes	✓			Yes (A12/A120 pilot RBS)			
	A12 Brentwood	**SE5:** noise levels	Yes	✓			Yes (A12/A120 pilot RBS)			
	A12 Ingatestone	**SE6:** noise levels	Yes	✓			Yes (A12/A120 pilot RBS)			
	A12 M25 to Ipswich	**SE7:** Calls for better facilities for VRUs needed to avoid need to use A12	Yes		✓	✓	Yes (after events)			
	A12 Lowestoft to Great Yarmouth	**SE8:** need for more/better cycling facilities – increasingly popular for recreational cycling along coast			✓	✓	no			
	A120 Marks Tey	**SE9:** poor provision for cyclists / pedestrians			✓		no			
Other	A47 Norwich to A14 Needham Market	**O1:** Calls to Re-trunk A140. Fund improvements					Yes			✓
	Between Ipswich and Lowestoft	**O2:** Calls to Re-trunk A12. Fund improvements					Yes		✓	
	A12 (M25 to Ipswich)	**O3**: Calls to develop further potential for mode shift to rail			✓		Yes (A12/A120 pilot RBS)			
	A120 between A12 and A133 east of Colchester	**O4**: local links very poor leading to much longer trips and discouraging growth				✓	no			

4.7 Conclusion

4.7.1 The evidence compiled about the East of England route has shown that the route is a focal point for future growth occurring around a number of dispersed, large and medium-sized urban centres including the sub-regional centres of Peterborough, Norwich, Cambridge, Ipswich and Chelmsford, plus other key centres including Braintree, Colchester, King's Lynn, Great Yarmouth, Lowestoft and Thetford.

4.7.2 The route acts as a network of important arteries across East Anglia, linking its key urban centres with each other and the rest of the country. It serves the ports of Harwich, Lowestoft and Great Yarmouth on the eastern coast, and intercepts a number of other key corridors including the London to Leeds (East), London Orbital and Felixstowe to the Midlands routes. It is therefore pivotal to facilitating long-distance and inter-urban traffic movements across a large area of eastern England.

4.7.3 In general, the higher standard route sections that run between main urban areas tend to perform the best. Such sections include the rural dual carriageway sections of the A11, A47 and A120.

4.7.4 The A12 is a popular, heavily trafficked road, but on several sections the lack of viable and attractive alternative roads means that when incidents occur, motorists have limited options to avoid delays and congestion. This applies to other roads along the route. Lack of wide hard strips or hard shoulders on some key stretches is seen to exacerbate this, as are those sections of the route with frequent at-grade junctions.

4.7.5 The route will continue to be a focal point in the future, with local housing and economic growth likely to take place around many of eastern England's large and medium-sized urban centres. More than 140,000 new homes are expected to be built and around 110,000 new jobs created by 2021 across the Local Enterprise Partnerships (LEPs) traversed by the route. There are likely to be concentrations of local housing and economic growth around all the major urban centres as well as the creation of new standalone communities up to and beyond 2031.

4.7.6 Figure 4 summarises some of the key issues and challenges that the route will experience during the 5 years from 2015, with the following sections and Table 4.1 explaining these issues and challenges in more detail. High priority issues for stakeholders include the lack of capacity on the A47 at Wisbech, Swaffham, Dereham, Honingham, Blofield to North Burlingham, Easton to Tuddenham and Thickthorn, lack of capacity on the A12 south of Chelmsford and between Chelmsford and Colchester, the poor standard of the A120 between Braintree and Marks Tey, and calls to re-trunk the A140 between the A14 and A47.

4.7.7 Our own network intelligence also highlights: a growing challenge to maintain deteriorating assets such as surfacing, including a significantly higher proportion of concrete surfacing than is typical nationally; limited capacity to accommodate significant growth aspirations; and network resilience and capacity weaknesses particularly on lower standard route

sections. It also highlights a number of safety issues on the single carriageway sections of the A120 between Braintree and Harwich.

4.7.8 The committed programme of enhancement schemes, including in particular the A11 Fiveways to Thetford scheme which is scheduled for completion in 2014/15, is anticipated to improve connectivity and accessibility across parts of the route. Pinch-point programme schemes are planned on the A12 at Kelvedon and Hughes Corner (safety cameras), A47 Wansford nr Peterborough and Honingham in Norfolk (junction improvements) and on the A120 Galleys Corner, Braintree (junction improvement). It is expected however that capacity problems will exist which the committed programme of schemes will not address, some of these problems are already apparent on the route and are likely to be exacerbated in the future as growth occurs.

4.7.9 The HM Treasury report Investing in Britain's Future promoted a number of feasibility studies that the government will undertake to inform potential future investment in highway improvements. In addition to these, the Secretary of State for Transport later announced in August 2013 that the **A47/A12 Peterborough to Lowestoft** would also be added to this list of feasibility studies.

4.7.10 The Highways Agency is committed to respecting the Environment across all its activities and to minimising the impact of the trunk road on both the natural and built environment. Air quality and noise are particularly sensitive in a number of locations along the route. Air Quality Management Areas (AQMAs) have been declared alongside the route at Wisbech and Brentwood. Locations particularly vulnerable to traffic noise (classed as Important Areas) are declared at Peterborough, Colchester and Chelmsford. There are known areas of water pollution risk on the A47 between Eye and Guyhirn, at King's Lynn, Swaffham, Norwich, Great Yarmouth and on the A120 between Hare Green and Harwich.

4.7.11 We are also aware of a number of locations of cultural heritage, ecology and landscape sensitivity all of which we aim to mitigate in our operations and in the design of maintenance and improvement schemes.

4.7.12 There is a desire for TMD activities to be enhanced so that they can play a much enhanced role in the operational arrangements of the route, including the managing of traffic following incidents and the provision of more intelligent information for motorists. With the exception of very short sections of the route where they adjoin the M11 and M25 there is currently no routine patrols by the Agency's traffic officer service (TOS) on this route. Given the nature of the route there is likely to be scope to deliver benefits through expanding the TOS onto some key additional sections.

4.7.13 Maintenance is identified as a key challenge for the route including the improvement of pavement condition and is considered a priority in the five year period covered by the Stage 1 RBS Evidence Report. This is largely due to the significant length of single carriageways within this route, but is also a challenge on older dual carriageway sections built

below current standards that can make partial closures more challenging.

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East of England
Route-based strategy – Map 1 of 4

Figure 4

Key opportunities and challenges for the route

Illustrative

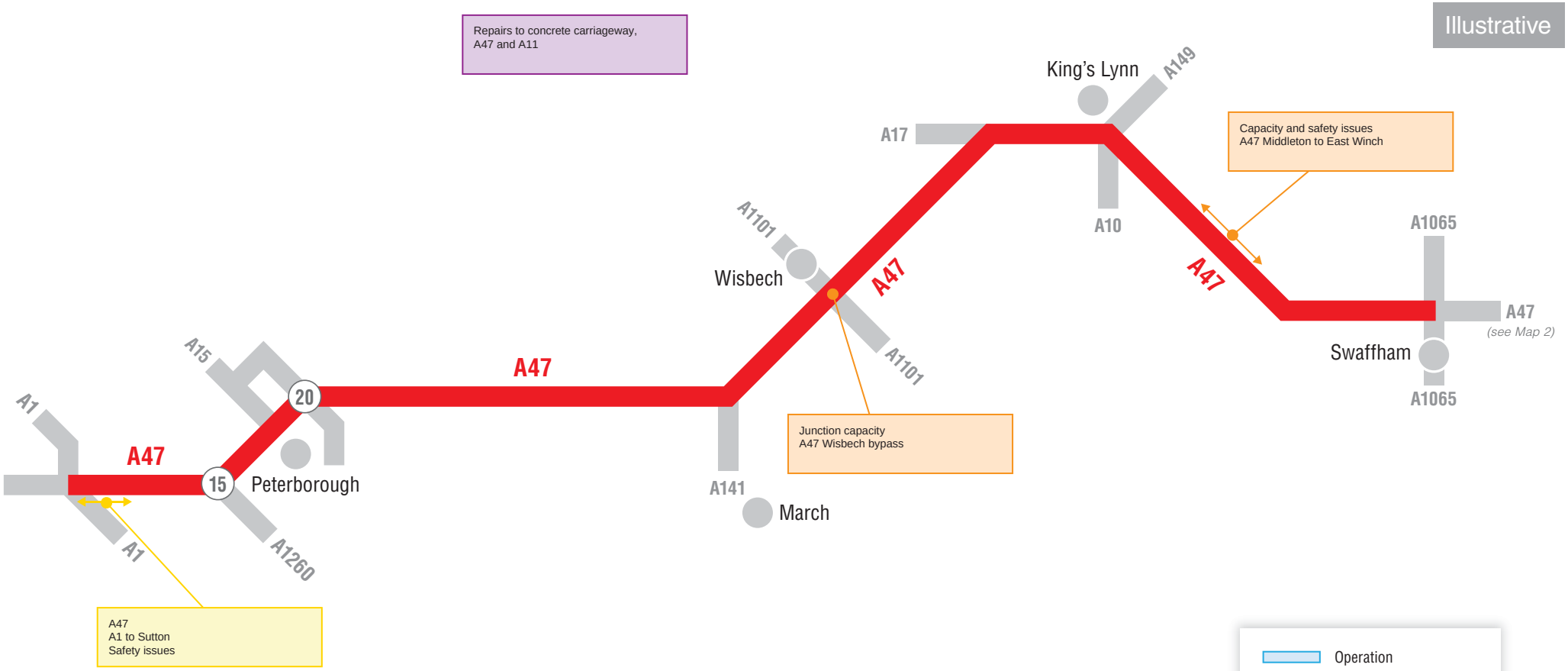
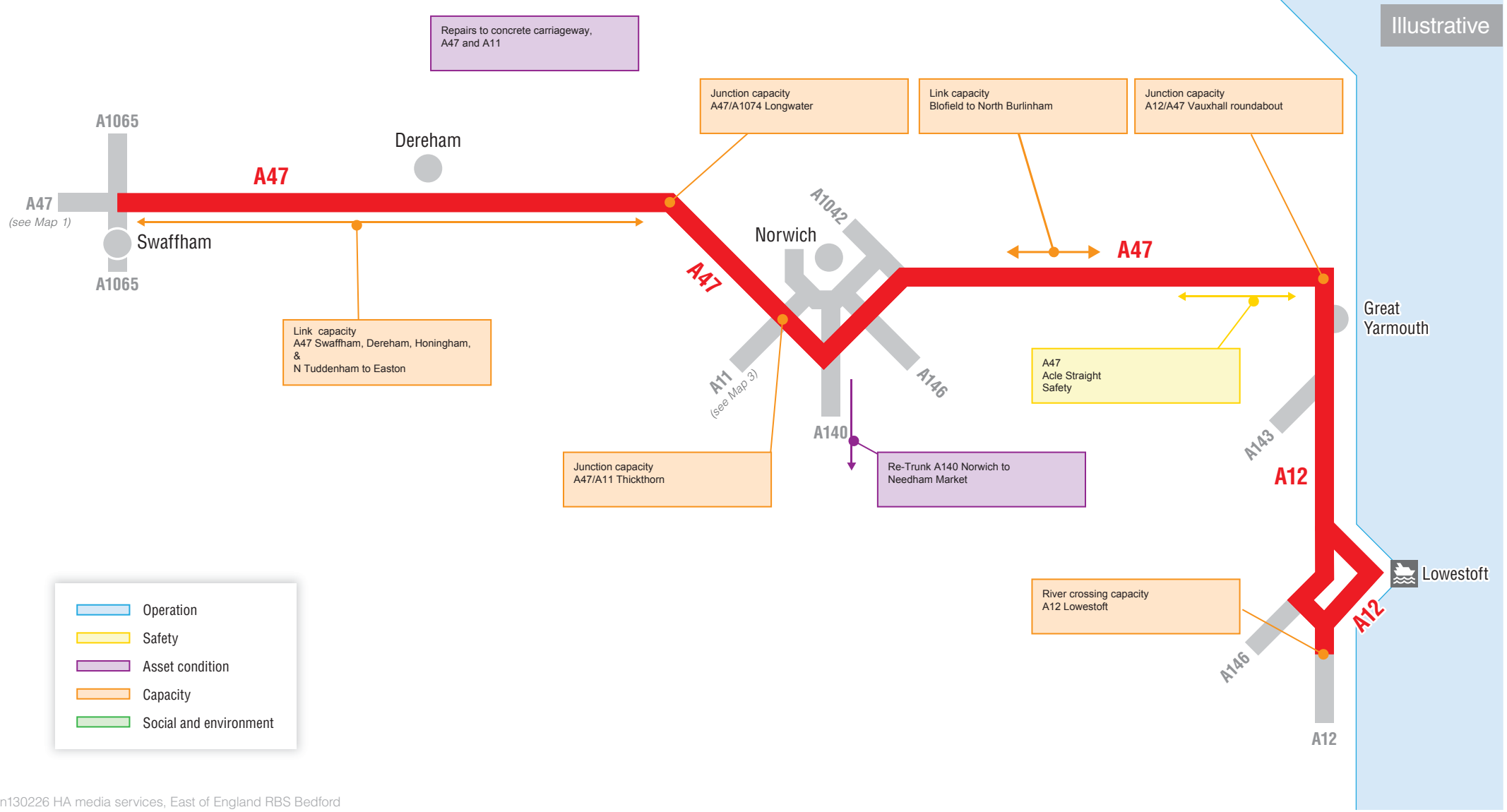


Figure 4

Key opportunities and challenges for the route

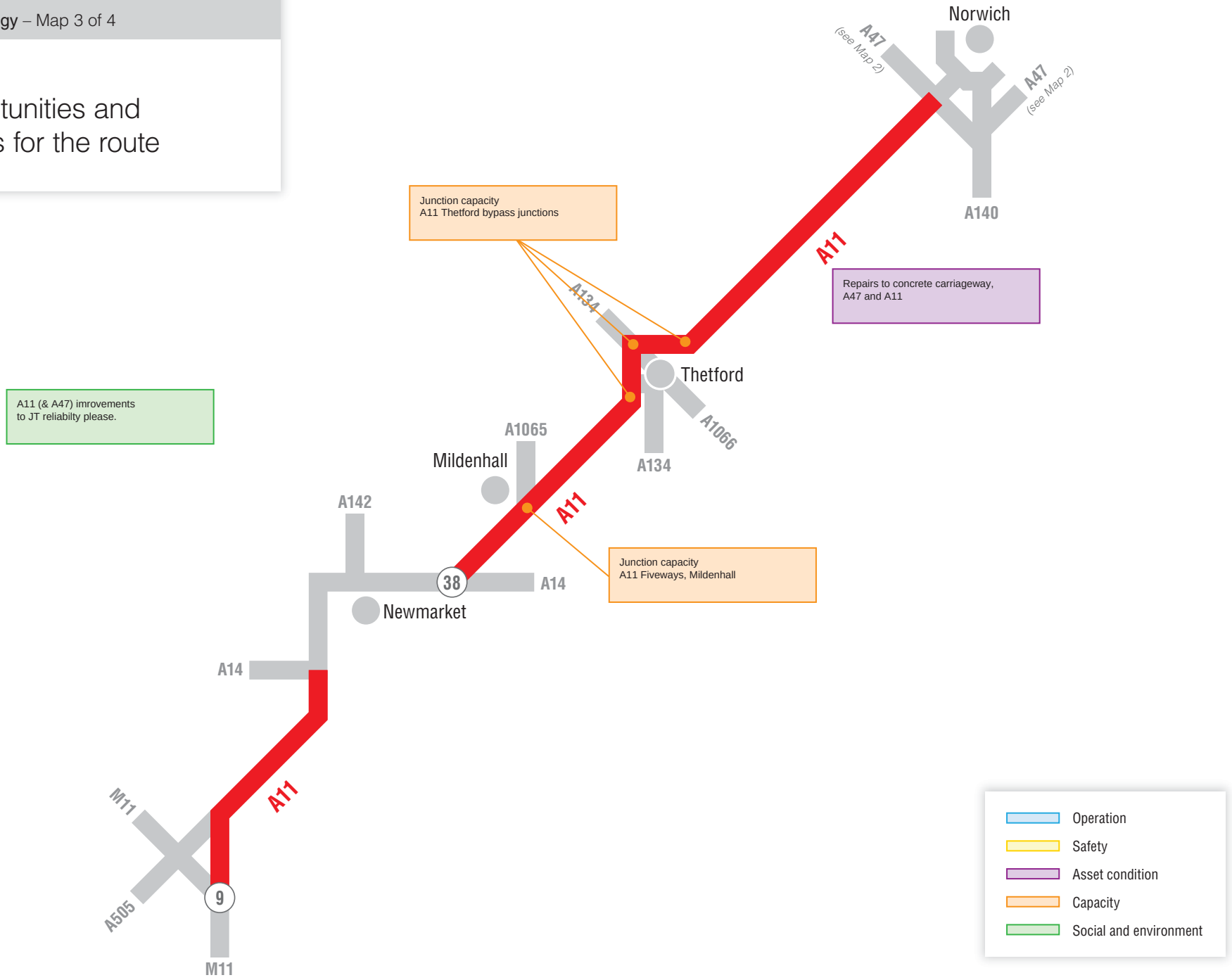


East of England
Route-based strategy – Map 3 of 4

Figure 4

Key opportunities and challenges for the route

Illustrative

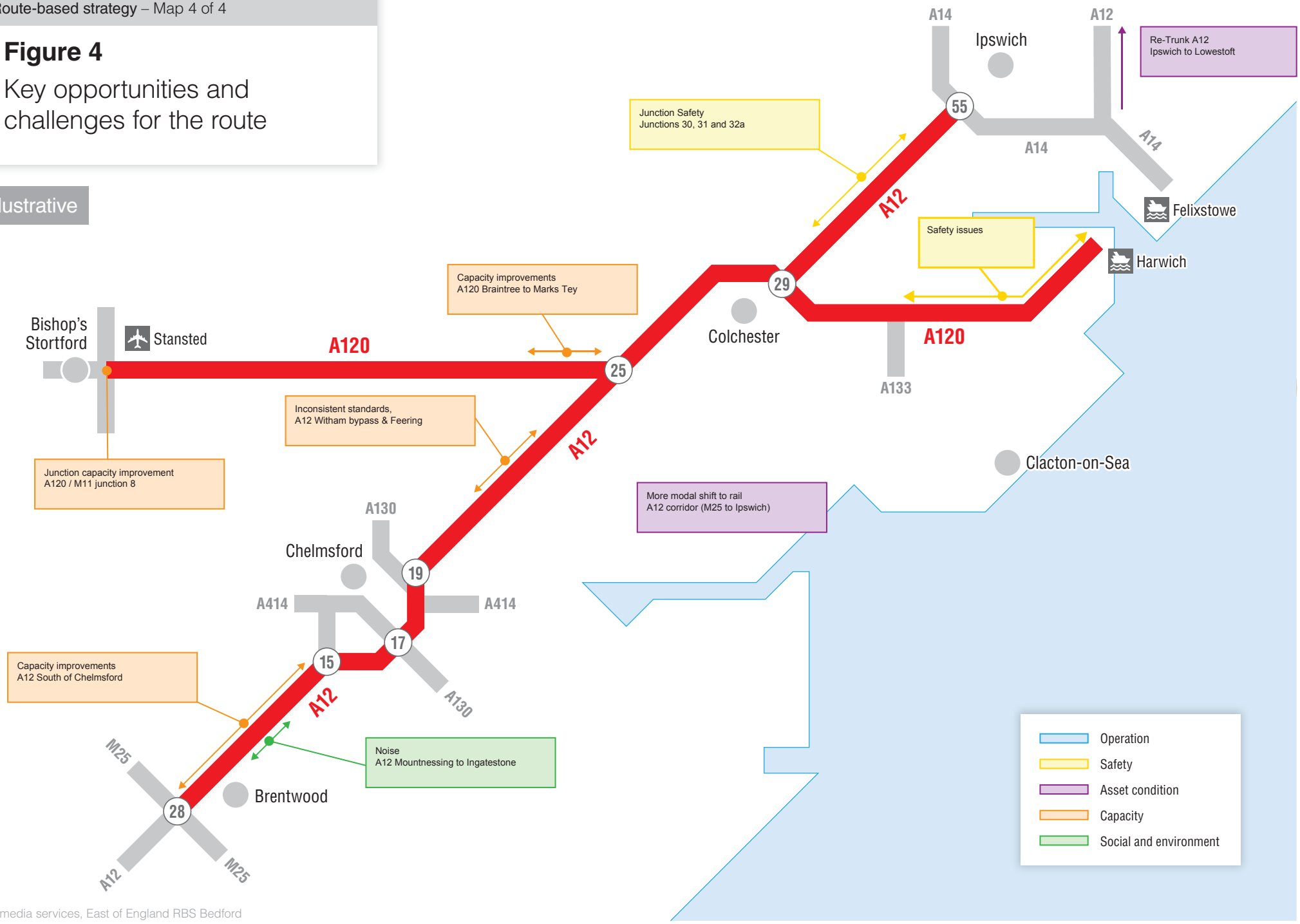


East of England
Route-based strategy – Map 4 of 4

Figure 4

Key opportunities and challenges for the route

Illustrative



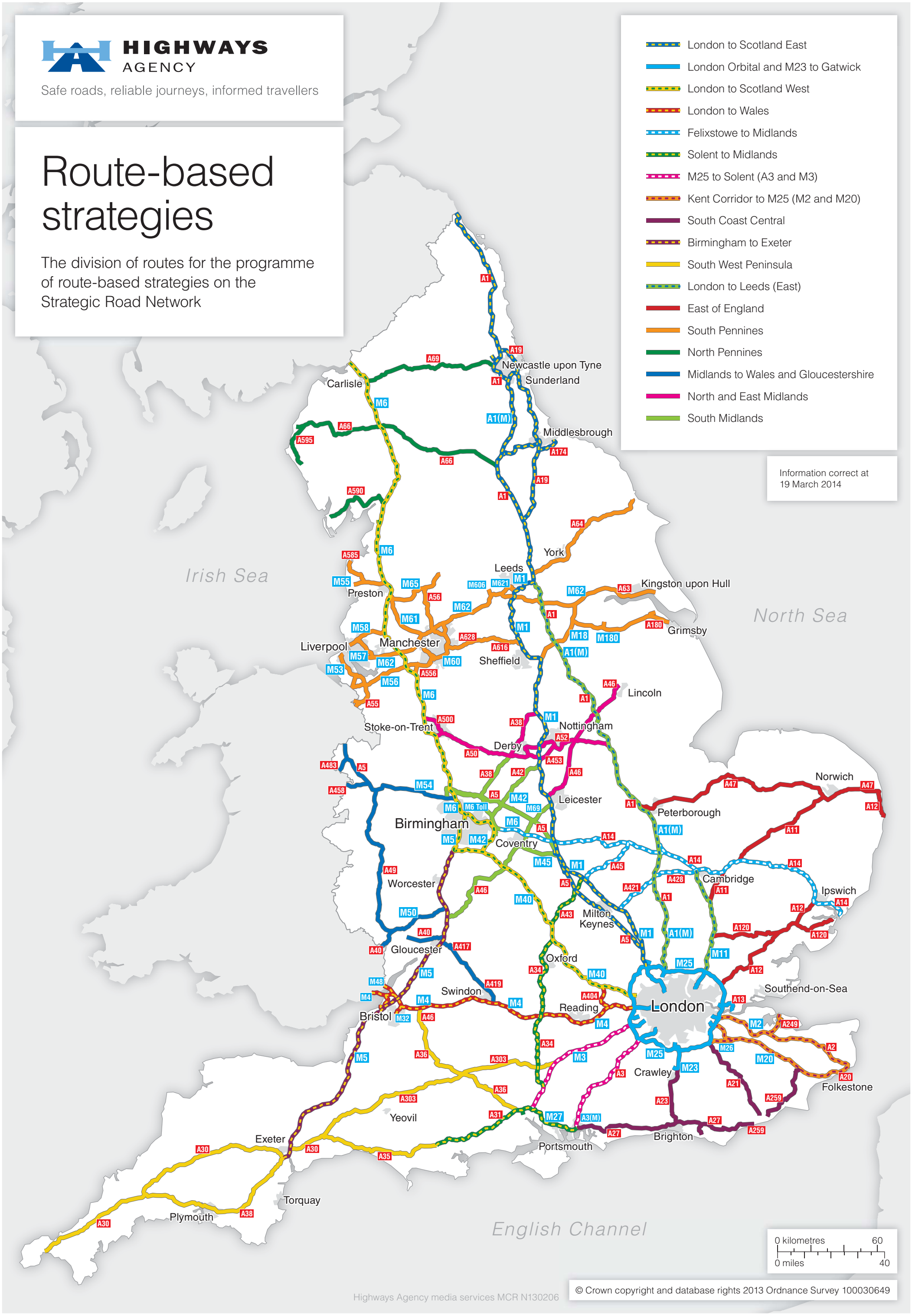
Appendix A Route map

HIGHWAYS AGENCY

Safe roads, reliable journeys, informed travellers

Route-based strategies

The division of routes for the programme of route-based strategies on the Strategic Road Network



- London to Scotland East
- London Orbital and M23 to Gatwick
- London to Scotland West
- London to Wales
- Felixstowe to Midlands
- Solent to Midlands
- M25 to Solent (A3 and M3)
- Kent Corridor to M25 (M2 and M20)
- South Coast Central
- Birmingham to Exeter
- South West Peninsula
- London to Leeds (East)
- East of England
- South Pennines
- North Pennines
- Midlands to Wales and Gloucestershire
- North and East Midlands
- South Midlands

Information correct at 19 March 2014

Appendix B Glossary

Abbreviation	Description
AQMA	Air Quality Management Areas
CC	County Council
CCTV	Closed Circuit Television
DASTS	Delivering A Sustainable Transport System
Defra	Department of Environment, Food and Rural Affairs
EERM	East of England Regional Model
ERCC	Eastern Region Control Centre
GEML	Great Eastern Mainline
HRA	Hot Rolled Asphalt
LA	Local Authority
LEP	Local Enterprise Partnership
LNMS	Local Network Management Schemes
LOIS	London to Ipswich Multi-Modal Study
MIDAS	Motorway incident detection & automatic signalling
MP	Major Projects
RBS	Route Based Strategy
S278	Section 278 of the Highways Act Schemes
SELEP	South East Local Enterprise Partnership
SRN	Strategic Road Network
TCB	Tension Corrugated Beam
TMD	Traffic Management Division
TOS	Traffic Officer Service
TSC	Thin Surface Course
TSCS	Thin Surface Course System
VMS	Variable Message Sign
VRU	Vulnerable Road User

Appendix C Stakeholder involvement

Organisation	Contact Name	Provided Input
A47 Alliance Norfolk County Council	Cllr David Harrison	
Anglia Ruskin University	Sandy Lynam	
Basildon Borough Council	Carl Glossop	
Braintree District Council	Peter Smith	
Breckland DC	Phil Mileham	
Broadland DC	John Walchester	
Cambridge AirPort	Steve Sillery	
Cambridge Chamber of Commerce	Gill Prangnell	
Cambridge City Council	Ben Bishop	
Cambridge University (represented by PBA)	John Hopkins	
Cambridgeshire CC	Bob Tuckwell	
Cambridgeshire County Council	Mike Salter	
Campaign for Better Transport	Andrew Allen	
Campaign for Better Transport	Sian Berry	
Carillion/WSP (MAC8)	Peter Smith	
Castle Point Borough Council	Kevin Wright	
Chelmsford City Council	Derek Stebbing	
Colchester Borough Council	Rachel Forkin	
Councillor for Babergh DC	Cllr John Hinton	
Department for Business Skills & Innovation	Iain McNab	
Department for Transport	Susanne Isaacs	
Department of Business Innovation & Skills	Clare Milton	
Department of Business Skills & Innovation	Mick Lazarus	
Department of Transport	Richard Mace	
East Cambridgeshire DC	Sally Bonnet	
East of England Ambulance Service	Paul Frost	
Epping Forest District Council	John Rowley	
Essex Chambers of Commerce	John Dallaway	
Essex County Council	Chris Stevenson	
Essex Fire and Rescue Service	Gary Church	
Evergreen Extra MSA	Mike Stanley	
Fenland District Council	Wendy Otter	
Forest Heath DC	Magnus Magnusson	
GCGP Enterprise Partnership	Adrian Cannard	
Great Yarmouth BC	David Glason	
Harlow Council	Paul MacBride	
Haven Gateway Partnership	Steve Clarke	
Huntingdonshire DC	Stuart Bell	

Ipswich BC	Michael Newsham
King's Lynn and Wes Norfolk	Peter Jermany
Maldon District Council	Gary Sung
Mid Suffolk DC	David Sparkes
MP for Castle Point	Rebecca Harris
MP South Basildon & East Thurrock	Stephen Metcalfe
MP for Witham	Priti Patel
National Express	Chris Atkinson
Natural England	Ross Holdgate
Natural England	Gordon Wyatt
New Anglia Local Enterprise Partnership	Marie Finbow
Norfolk CC	David Cumming
Norfolk Chamber of Commerce	Eddie Tyrer
Norwich City Council	Joanne Deverick
Office of Richard Bacon MP	Mike Rigby
Peterborough City Council	James Harrison
Port of Felixstowe	Paul Davey
Port of King's Lynn - King's Lynn Docks, Norfolk	Graham Tetley
Rochford District Council	Samuel Hollingworth
Rutland County Council	Gary Toogood
Skanska (MAC6)	Nick Mills
South Cambridgeshire DC	Tumi Hawkins
South Cambridgeshire DC	Keith Miles
South Norfolk Council	Ian Lambert
Southend-on-Sea Borough Council	Karen Gearing
St Edmundsbury DC	Ian Poole
Suffolk Chamber of Commerce	Richard Perkins
Suffolk Coastal DC	Carolyn Barnes
Suffolk Constabulary	Steve Griss
Suffolk County Council	Peter Grimm
Suffolk University	Sarah Collins
Sustrans	Kris Radley
Sustrans	Rohan Wilson
Sustrans	Anthony Wright
Sustrans - Beds and Herts	Peter Bate
Sustrans - Midlands and EOE	Peter Orban
Tendring District Council	Tom Gardiner
The Broads Authority	Natalie Beal
Thurrock Council	Les Burns
Uttlesford Council	Melanie Jones
Waveney DC	Desi Reed

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