

A12 / A120 route based strategy

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Document history

A12/A120 route-based strategy

Highways Agency

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Executive summary

Introduction

The A12/A120 was chosen to be one of the first strategies to be developed by the Highways Agency because of its importance as part of a Strategic National Corridor and known issues. This strategy has clearly shown that the A12/A120 has national, regional and local significance. It supports the national and regional economy through providing the link between London and the South East to the ports at Harwich and Felixstowe, and then into Europe. Locally it is used as a commuter route, serving the growing towns of Chelmsford, Colchester and Ipswich.

Current capacity and future capability of the route

The strategy shows that the A12/A120 is an ageing route which has several key maintenance issues. It will also be functioning above capacity by 2021 and will clearly struggle to keep up with demand if the large amount of growth proposed for the towns and cities is built. There is a significant level of growth planned along the route both in terms of jobs and houses. The key areas are around Chelmsford and Colchester. The port of Harwich is also expected to expand in the future. All this will increase the level of traffic using the route both for commuting and long-distance travel purposes.

The main concern of stakeholders is the resilience of the route when an incident occurs. Currently there are very few alternative routes which users can take to avoid incidents and because of the variable standard of the route, clear up time following an incident can be lengthy. There is also a limited amount of technology used on the route to ensure that drivers are aware of issues on their journey and due to the variable nature of the route, it can be difficult for emergency services to attend incidents and consequently the clear up time is lengthened.

Route strategy

The strategy, whilst not identifying specific schemes, has identified key areas that need to be reviewed and investigated both in the short and long term. These include assessing the capacity required at key junctions such as the A12/A14 Copdock interchange and the capacity of those junctions that will be affected by the planned growth. It also suggests that sections of the route need to be brought up to current standard and the high number of direct accesses onto the route be reviewed. More immediate interventions such as investigating whether the technology used can be improved and the introduction of traffic officer patrols has also been included.

A key recommendation of this strategy is the better working of partners to provide a more transparent process for leveraging funding into the route in order for its future priorities and needs to be achieved.

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1 Introduction

1.1 Background

- 1.1.1 Alan Cook's report *A Fresh Start for the Strategic Road Network*, published in November 2011, made a number of recommendations, one of which was that the Highways Agency, working with local authorities and local enterprise partnerships, should initiate and develop route-based strategies for the strategic road network.
- 1.1.2 In the Secretary of State's response to the Cook review, published in May 2012, accepted the recommendation for route-based strategies, 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.
- 1.1.3 The Highways Agency has begun this process by developing three route-based strategies including the **A12 from the M25 to the A14 and A120 between A12 and Harwich** within the East of England. The routes were selected as they form a Strategic National Corridor and because of known road based issues, but with as yet limited solutions identified. The strategy seeks to address road based issues, provide a mechanism to engage with local partners, and ultimately bring together the national and local priorities to agree the needs of the route.
- 1.1.4 This strategy aims to pull together the numerous national and local studies that have already been carried out on this stretch of road to inform investment decisions. Local stakeholders have also been involved in developing the strategy to ensure that their priorities have been taken into account. The impact of development on the route has been investigated as well as local business needs.
- 1.1.5 The route-based strategy does not outline a 'shopping list' of potential schemes, but rather presents a higher level consideration of which parts of the corridor will become most stressed and when this will occur, as well as a consideration of how these stresses and demands can be managed.

1.2 **Scope**

1.2.1 The purpose of the route-based strategies is to inform the investment strategy for the network on a route by route basis, including operations, maintenance and any enhancements. It looks to facilitate economic growth, continue to manage journey time reliability and safety performance and maintain a resilient asset. The key objectives for the strategy are to: test the approach to inform how they will be implemented in the future; address road based issues on the strategic road network, forming the basis for making decisions on funding for the next spending review period; be a mechanism to engage with local stakeholders, to bring together national and local priorities and deliver tangible results that are strategically focused and realistic.

1.2.2 This route-based strategy covers: how to achieve the strategic road network objectives on the A12 and A120, and the local priorities agreed with stakeholders; investigation of an initial five year period plus a longer term horizon (a further 10 years); considers opportunities for innovation, the role of other networks and other techniques; maintenance, operational activities and improvements including both capital and operational costs; and the impact on local roads in surrounding areas that interface with the route. The route-based strategies do not cover other forms of transport (although recognising that the strategic road network does not operate in isolation, rail stations, ports, airports all have an influence). Engagement with local stakeholders has been focussed on the strategic road network.

1.3 **The route**

1.3.1 The route is shown in figure 1.0 below. It is a total of 78 miles, 109 km in length (A12 – 52 miles, 83km; A120 – 16 miles, 26km,). It passes through the local highway authority areas of Essex and Suffolk County Councils, and the local planning authorities of Brentwood, Chelmsford, Braintree, Colchester, Babergh, Maldon and Tendring District Councils.

Figure 1.0 The route



1.3.2 The A12 trunk road links the M25 to the A14 Copdock interchange at Ipswich and provides a crucial link between the communities along the route. It also acts as a major transport link between London and the East to the ports of Harwich and Felixstowe and serves as an abnormal load route. The A120 trunk road is an east-west route running from the M11 near to Stansted Airport to Harwich. This strategy focuses on the eastern section of A120 between Colchester and Harwich, although the strategy inevitably impacts upon the remaining western sections and vice versa.

1.3.3 The A12 (south) and A120 (east) serve several functions.

As a strategic route they:

- Link the ports of Felixstowe and Harwich for the movement of freight
- Form part of the Trans-European Network carrying international traffic;
- Act as major transport links between London, the South East and the East of England;
- Provide access to holiday destinations within the region and to mainland Europe.

1.3.4 Regionally they:

- Link the major regional centres along the route; and
- Provide for the distribution of goods and services.

1.3.5 Locally they:

- Provide the only means of access to some communities along the route; and
- Bypass towns along the route.

- 1.3.6 Although not technically within the study area the London Borough of Havering and Ipswich Borough Council lie immediately beyond each end of the study area to the extent they significantly influence and are influenced by the study routes.
- 1.3.7 The areas of Colchester and Chelmsford are recognised as the key focal points of current/future growth in the corridor, but several smaller communities are, nonetheless, expected to experience significant growth.
- 1.3.8 The A12 corridor 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.
- 1.3.9 Several previous studies have been carried out on the route – these include the *A12 Commission Inquiry (2008)*, *London to Ipswich Multi Modal Study (LOIS) (2002)*, *A12 Route Management Strategy (June 2001)*, and two DASTs studies; *London to Haven Ports study (September 2010)* and the *Substantial Transport Options for the Growing A12/GEML corridor towns (May 2010)*. See Appendix A for outlines of, or links to, these documents.
- 1.3.10 There are also local studies carried out by local authorities and groups such as the A120 Project Group and A12 Alliance which need to be taken into account.
- 1.3.11 The A12 Commission in particular gave an opportunity to understand the various users/stakeholders concerns regarding road travel on the A12, and these mainly related to reliability, the perceived poor safety record, and lack of heavy goods vehicle parking. The parallel *A12 Corridor Towns Study* also provides an important insight into the views of users and travellers to and from the key settlements in the corridor.

2 Capacity and capability of the route

2.1 Route operation and performance

- 2.1.1 The A12 carries heavy traffic flows, is often congested, vulnerable to accidents and incidents which often disrupt traffic over a wide area and is generally regarded as stressful for drivers¹. The reported traffic flows for the A12 range from nearly 60,000 to over 80,000 vehicles per day, in both directions, depending on the location, heavy goods vehicles account 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. Within the region only the A14 around Cambridge and the short stretch of the A120 coming off the M11 to Stansted Airport carry anything like the same volume of traffic. The A120 however, carries much less traffic than the A12 with up to 30,000 vehicles per day in some sections. A large proportion of the heavy goods vehicles using this route are travelling to and from the port of Harwich.
- 2.1.2 Key stress points² and issues are shown on figure 2.0 and figure 2.1.
- 2.1.3 Current and forecast future stress levels as shown on figures 2.0 and 3.0 are based on modelling undertaken nationally by the Department for Transport. The forecast stress levels at 2020 are based on estimated build-rates of local authority development plans as collated by the Department of Communities and Local Government (DCLG).
- 2.1.4 Department for Transport statistics show that the A12 performs poorly in terms of reliability and delay compared to other trunk roads – the high volumes using the routes combined with the slow journey times make

¹ A12 Commission of Inquiry Report

² Stress is measured as the relationship between traffic volume and the capacity of the road - if the road is at 100% stress level it theoretically has no spare capacity to accommodate more vehicles, however it is possible to exceed this but in practice this results in a reduced level of service with increased queuing and congestion and decreased journey reliability.

total vehicle delay well above the average for all trunk A roads and above the average for most motorways.

- 2.1.5 Safety is often expressed as the main concern along the route by users. Whilst the accident rate (see figure 2.1) is below the average for rural A-roads, clear up times significantly affects journey reliability. Major factors in this are the lack of alternative routes and variability in the standard of the road. There are however, sections with significantly higher accident rates, in particular north and east of Colchester (see figure 2.1).
- 2.1.6 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 an 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.

Fig 2.0
Current Flows and Stress

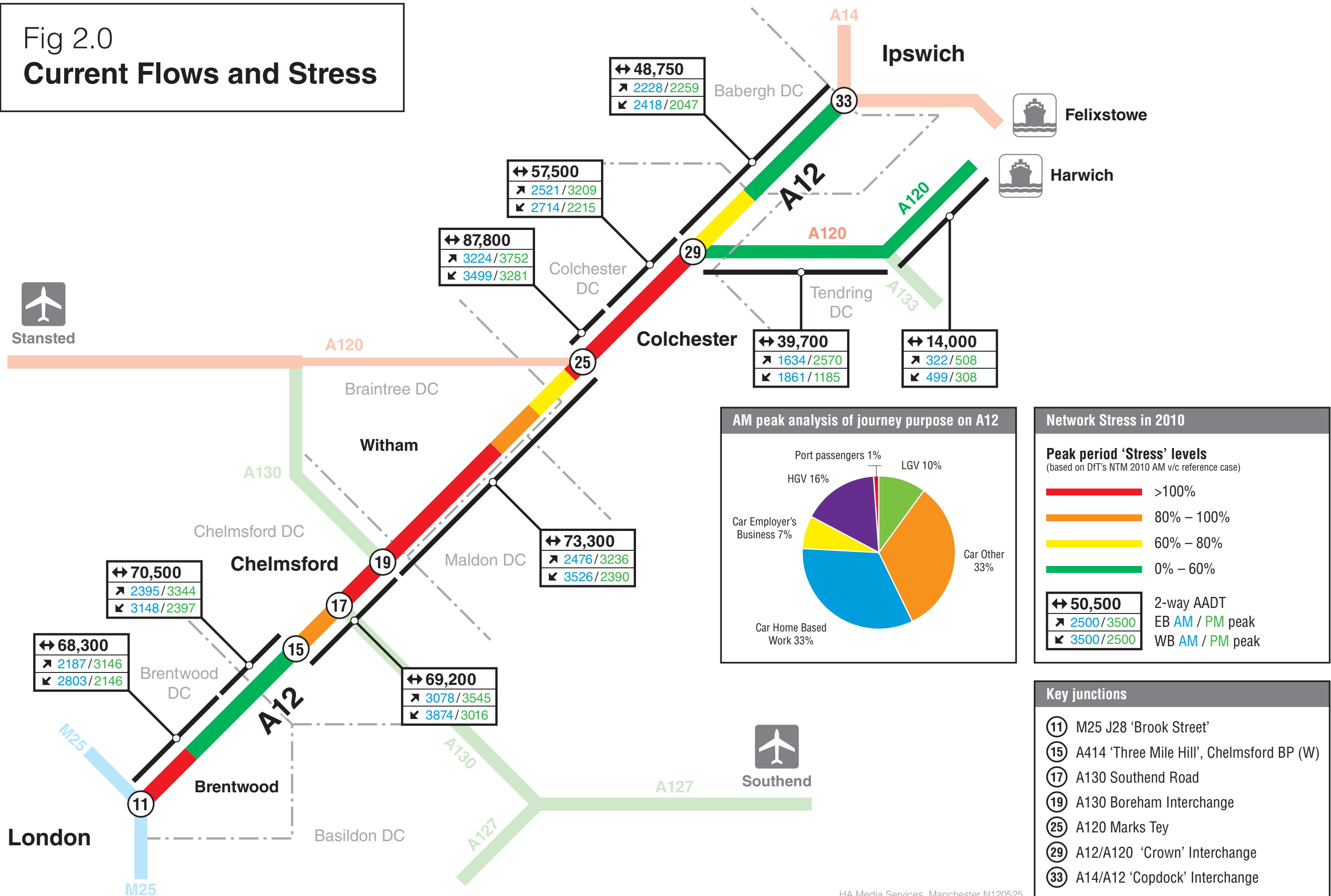
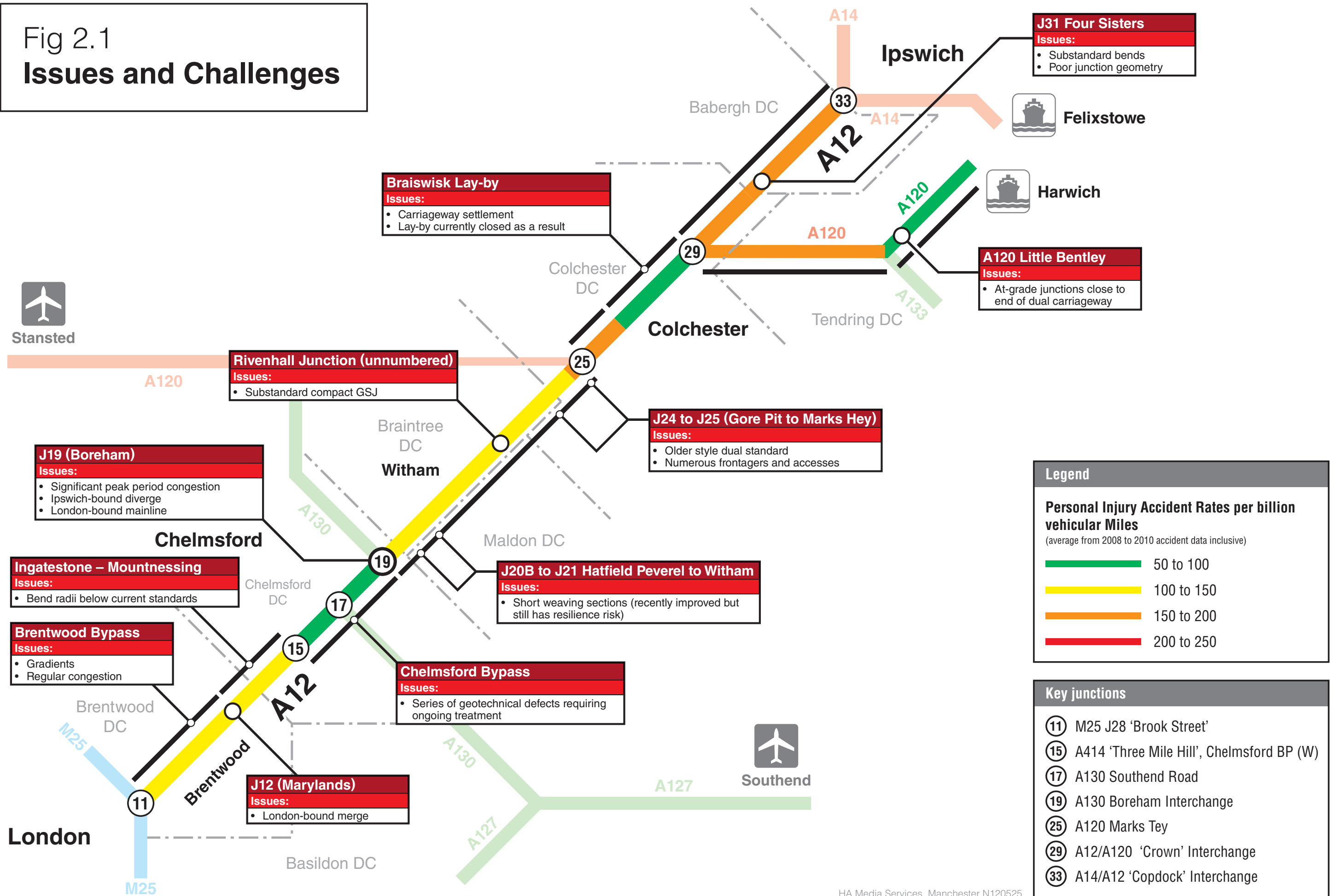


Fig 2.1
Issues and Challenges



Legend

Personal Injury Accident Rates per billion vehicular Miles
(average from 2008 to 2010 accident data inclusive)

- 50 to 100
- 100 to 150
- 150 to 200
- 200 to 250

Key junctions

- ①① M25 J28 'Brook Street'
- ①⑤ A414 'Three Mile Hill', Chelmsford BP (W)
- ①⑦ A130 Southend Road
- ①⑨ A130 Boreham Interchange
- ②⑤ A120 Marks Tey
- ②⑨ A12/A120 'Crown' Interchange
- ③③ A14/A12 'Copdock' Interchange

2.2 Existing characteristics

- 2.2.1 As seen in Appendix B, the routes are of varying quality and switch between dual two and three lane carriageway standards at various points along the study length; they are derestricted (i.e. subject to the national speed limit of 60 or 70 mph) along their entirety. The piecemeal creation and following improvements, to the A12 in particular, over the past 50 years have contributed to a varying level of standard and carriageway layout.
- 2.2.2 Along the route, there are junctions with other major routes and many local roads. The junctions along the routes vary from fully grade separated interchanges to rural give ways.
- 2.2.3 In addition there are many private accesses and businesses that directly join the A12 and A120. For example, over a distance of 44 miles (71 km) in Essex, there are 49 private accesses, six service stations with frontage access onto the road and a further five service stations located on or very close to A12 interchanges. In addition there are 9 miles (15 km) of cycle ways and footpaths alongside the road and 39 public rights of way across different parts of the road³.

³ Information provided by the A12 Report of Commission Inquiry

2.3 Non-motorised usage

2.3.1 In terms of non-motorised usage of the A12, presently there is:

- (a) A two way cycletrack between Marks Tey and Feering/Kelvedon turn off;
- (b) A two-way cycle/footway between Kelvedon and Witham turn off through Rivenhall;
- (c) A two-way cycle/footway between Witham on slip and Hatfield Peverel off slip;
- (d) No cycle facilities south of Hatfield Peverel
- (e) There are no cycle facilities on Witham and Kelvedon bypasses. Cyclists are assumed to use the old road through the villages

2.3.2 There are also a number of public rights of way crossing the route.

2.4 Operations management

2.4.1 The management of the route through the National and Regional Traffic Control Centres, the Traffic Officer Service (including response by on-road traffic officers) and the use of technology play a key role in the reliability and safety of the network. This section aims to consider some of the operational management issues on the route.

Events / seasonal issues

2.4.2 There are no planned major events along this route nor is the operation of the route influenced by seasonal changes.

Climate / weather

2.4.3 The route is not adversely affected by bad weather. There have been some instances of localised flooding, however this is largely due to run-off from adjacent fields or blocked culverts. The river Widd has been identified by the Environment Agency as a risk location – this may affect junctions 12 to 13 of the A12 and the River Chelmer may affect junctions 18 to 19 or the A12.

2.4.4 The ports are obviously affected by bad weather and may close if they can not operate.

Traffic mix

2.4.5 At present there is no operation 'stack' system at Harwich because the size of the port does not warrant it. However if the planned growth does take place, this may need to reviewed and consequently, there may be an impact on the A12/A120. At Felixstowe, the 'stack' operates on the A14, so whilst it does not affect the A12, it may affect freight traffic.

Route characteristics

2.4.6 The A12 contains sections of road which do not meet current standards, particularly in Suffolk. There are frequent sections of dual carriageway without hard strips. Appendix B shows link and major junction standards.

2.4.7 Lay-by provision has been improved in recent years during major maintenance schemes but overall provision and layout of lay-bys is below current standards⁴. Targeted improvements to lay-by provision should be investigated where they could support quicker incident clear up rates, through providing safe places for vehicles to be moved to.

Technology provision

2.4.8 Technology does not feature highly along the route. Currently the national roads telecommunication system (also known as NRTS) is present only along a short (approx. 1 mile) section east of the M25. An earlier route management scheme had identified technology as part of a route management approach and was supported by Department for Transport, however due to funding constraints this was not implemented.

Incidents

2.4.9 In terms of incidents, between December 2010 and November 2011, there were on average 20 recorded incidents a month with an average impact time of 103 minutes (see table 3.0). However it should be noted that the A12 and A120 are not routes regularly patrolled by the Traffic Officer Service so the number of incidents may actually be higher. The main causes of the recorded incidents were road traffic collisions (RTC) (44%) broken down vehicles (27%) and debris (17%).

⁴ Data taken from A12 Report of the Commission Inquiry.

2.4.10 The number, location of incident and the time of recovery have a major impact on route performance. Recovery time is affected by the variability in standard of the route. For instance the sections of dual 2 carriageway with a hard strip at current standards, is still able to accommodate two lanes of traffic when minor incidents occur; however where there is no hard strip, complete closure may be the only option. This is critical when noted alongside the lack of alternative routes. Therefore overall journey reliability is affected.

2.5 **Current asset condition**

2.5.1 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.

2.5.2 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.

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

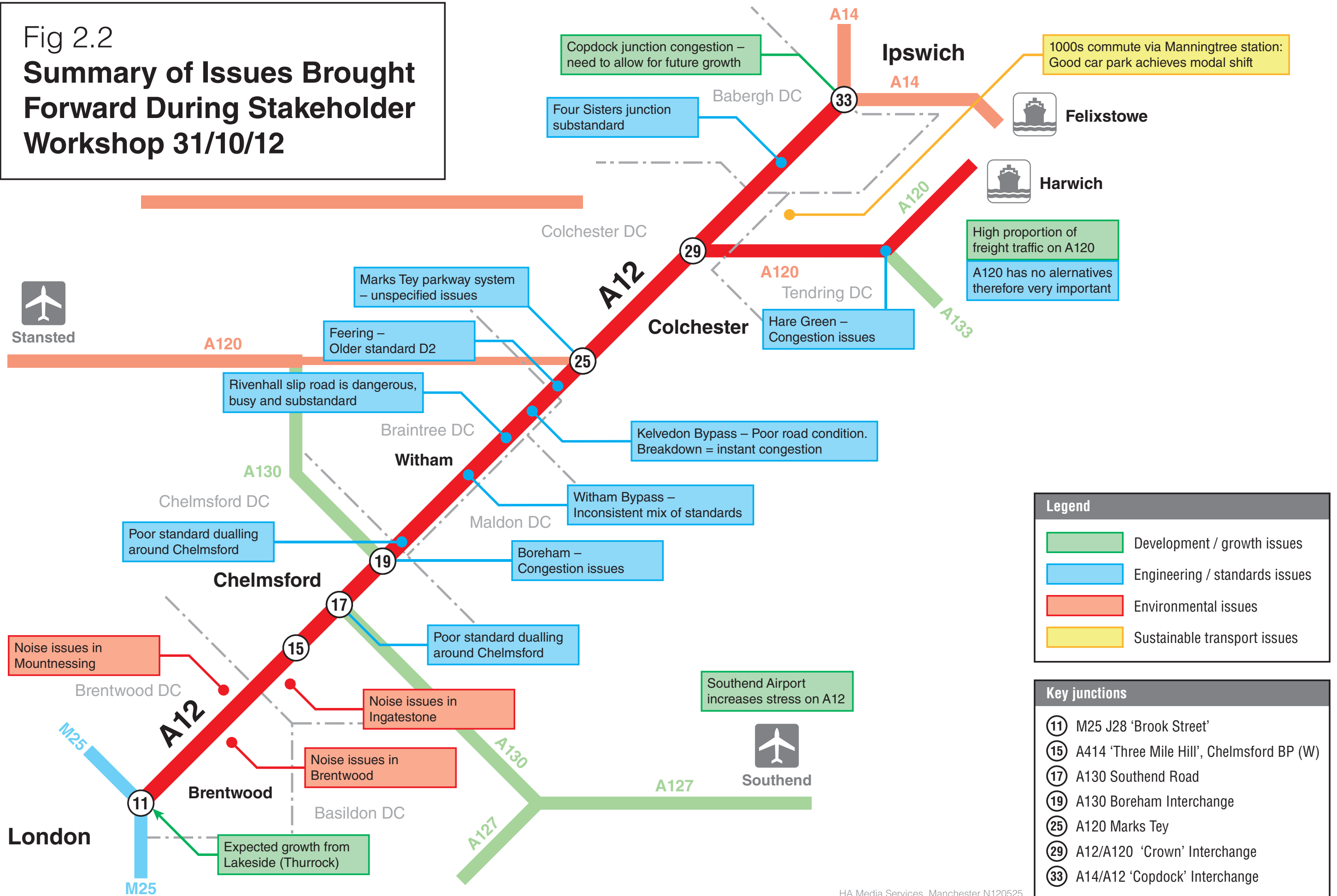
2.5.4 At the A12 Braiswick lay-by (Colchester Bypass), continued settlement of the north and south bound road pavement has resulted in a number of resurfacing schemes. The lay-by is currently closed as a result of the defects.

2.5.5 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.

2.6 Stakeholder and customer information

- 2.6.1 A summary of the issues discussed at the stakeholder workshop on 31 October 2012, can be found in figure 2.2.
- 2.6.2 In general the stakeholders felt that the A12 has a poor reputation for journey reliability and high levels of congestion. A perceived lack of investment in the East of England is having a detrimental effect on the whole infrastructure system, with a lack of coordination between the different modes of transport. The route was felt to be of an inconsistent mix of standards, with certain sections needing to be brought up-to-date with respect to traffic capacity and road safety.
- 2.6.3 Stakeholders also considered a number of junctions along the A12 were considered to be at or over capacity, and the opinion was that this is down to poor or outdated junction design. A number of specific examples such as the Rivenhall (unnumbered junction between junctions 22 and 23) and Four Sisters (A12 junction 30) junctions were cited as being of extremely poor geometric standard.
- 2.6.4 Stakeholders felt that congestion was often unnecessarily caused by poor driver behaviour, with issues concerning weaving traffic, driver distractions and overtaking by heavy goods vehicles in busy conditions.
- 2.6.5 The recent customer satisfaction survey did not highlight any specific concerns with the A12, however the respondents using the A12 generally used it out of peak times. In previous studies, customers using the A12 have expressed concern about journey reliability, the lack of alternative routes when an issue arises and the safety of some junctions – in particular the heavily trafficked Copdock junction and the junction with the M25.
- 2.6.6 Some stakeholders highlighted noise issues along the route. We are currently consulting with local authorities on the noise action areas that have been identified by DEFRA.

Fig 2.2
Summary of Issues Brought Forward During Stakeholder Workshop 31/10/12



3 Future route requirements

3.1 Future priorities

- 3.1.1 It is expected that local priorities for the route will remain unchanged in the future – the route will still be used as a commuter road; carry freight traffic between London and the ports, and act as a local means of access between the towns and villages. It will remain critical to the towns and communities that it serves.
- 3.1.2 However, the pressure on the route will grow due to a significant amount of development planned by the local authorities as well as the growth of the ports. This is shown in figure 3.0 below which sets out the future growth in terms of housing and jobs.
- 3.1.3 Stakeholders have also suggested that the growth of both Stansted and Southend Airport will impact on the route, although no recent studies have been carried out to investigate whether this is the case or not.
- 3.1.4 A list of stakeholder priorities for the route can be found at Appendix C.
- 3.1.5 The future strategic priorities will also remain similar to the current ones. In the absence of any new road being built, the corridor will remain the only strategic route directly linking London and the South East with the main towns of Ipswich, Brentwood, Colchester and Chelmsford as well as providing access to the Haven Ports and the rest of East Anglia.
- 3.1.6 The importance of the ports to the UK economy continues to increase - the Haven ports are important links between the UK and the global supply chain. It is expected that by 2030 the Haven ports will have 37%⁵ of the UK's total deep sea capacity. It is clear therefore that a significant and growing portion of the UK's trade of goods, particularly in containers, will continue to use the Haven ports. Ensuring effective distribution to and from these ports is critical to future UK competitiveness.

⁵ Data taken from National Networks, London to Haven Ports Study Sept 2010

- 3.1.7 There are real concerns from local business stakeholders that the route at its current standard will not have the capacity to cope with this increased level of growth and increasingly will act as a barrier.
- 3.1.8 It should be mentioned that the economic downturn experienced in the country may encourage an increase in the public holidaying in the UK. This may increase levels of seasonal traffic to coastal locations and other tourist locations; thereby partly offsetting reduced demand on the A12 caused by the downturn on routes in the East. This however can not yet be quantified.
- 3.1.9 Figure 3.0 shows the future stress levels on the route – it demonstrates very clearly that demand along large sections of the route will be more than its operating capacity before 2021⁶.
- 3.1.10 The operation of the A12 corridor can not be considered without investigating the Great Eastern Main Line (GEML). This rail link runs parallel to the A12 thus creating a close relationship between road and rail. Currently there appears to be limited potential for modal shift from road to rail, particularly for international container traffic⁷ for three main reasons; A proportion of the goods being moved (e.g. some perishables) are extremely time sensitive; the scarcity of intermodal terminals in Greater London would require rail access directly to logistics sites currently being served by road, and these are very limited and even where intermodal transfer can be effected; the distances of less than 93 miles (150km) from the Haven ports could make it uneconomic to make the main leg by rail and then to have to transfer to road for the final stage, compared with road all the way from the port.
- 3.1.11 It should also be noted that the *Network resilience and adaptation report (June 2010)* for the Highways Agency identified the GEML as a hotspot. While it has some sections of four-track, it is basically a double track railway with low levels of ability to provide services when one part of the system fails and a lack of availability of realistic diversionary routes.

⁶ Data taken from the London to Haven Ports study and the Highways Agency Regional Network Report 2010 – East of England

⁷ London to Haven Ports Study Sept 2010

3.1.12 Having said all this, stakeholders commented that there may be potential to shift commuter traffic from road to the railways, but this needs to be investigated. It should also be noted that the Felixstowe to Nuneaton rail line is currently being upgraded to allow for rail freight traffic to be re-routed avoiding London. This may affect the GEML and free-up capacity allowing for modal shift, however this also needs to be investigated.

3.2 Future maintenance requirements

3.2.1 The Wellington Bridge at Hatfield Peverel has suffered a couple of bridge strikes causing a significant amount of damage. Following an initial strike to the deck in 2010 which was programmed to be repaired in summer 2012 the bridge was subject to a second strike in May 2012 in a similar location. The initial scheme was therefore modified and repairs are now to take place in 2013.

3.2.2 Delivery of significant infrastructure measures to mitigate the impact of proposed developments including the A12/A14 Copdock Mill interchange and part of Felixstowe roundabouts (to support the expansion of growth at the port of Felixstowe) and A12 junction (to support growth in north Colchester) continue to manage the anticipated demand generated by the improvements.

3.2.3 More detail on cost and major maintenance schemes can be found in Appendix D.

3.3 Stakeholders view of the future

3.3.1 The A12, in its current state, is felt to inhibit growth in the area, both due to the issues of congestion and journey unreliability which prevent businesses from moving to the area.

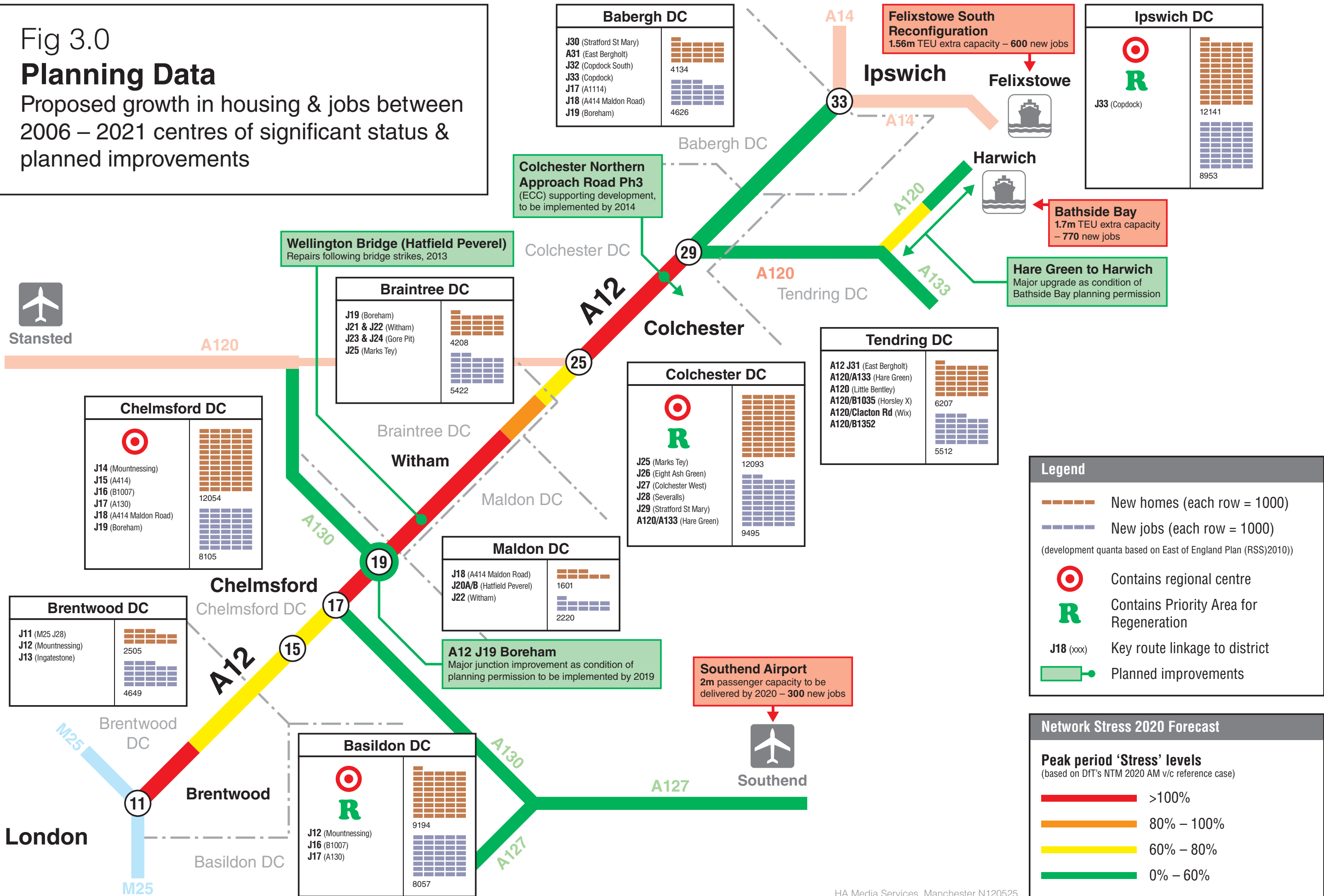
3.3.2 A particular issue was raised in respect of growth in the Brentwood area being constrained by the proximity of the A12/M25 junction.

3.3.3 The ability to deliver improvements along the A12 to accommodate growth was questioned, with the scope of the recent improvements at Hatfield Peverel believed to have been constrained by third party land issues.

Fig 3.0

Planning Data

Proposed growth in housing & jobs between 2006 – 2021 centres of significant status & planned improvements



HA Media Services, Manchester N120525

4 Route strategy

4.1 Overview

4.1.1 In order for the route to keep up with the planned growth and maintain its function as a strategic route from London to the ports, operational intervention and targeted investment will be required. These can be split between short-term (within the next 5 years) and long term (within the next 15 years).

4.1.2 It should also be highlighted that the recommendations below all need to support the Government's response to the Cook report in that they should support economic growth through the development of a resilient network, support a greener network and ensure that the route is maintained in a good physical condition and supports the safety and security of the users.

4.1.3 Figure 4.0 summarises the key recommendations which are set out below.

4.1.4 Appendix C sets out stakeholders views on the specific areas of the route which may need to be improved.

4.2 Short term:

4.2.1 **In order to reduce the number of incidents and improve journey reliability, the strategy has identified four key areas in the short term to improve:**

- (a) **Improved management of the route:** We should investigate whether there is a case to deploy traffic officers or use other techniques such as 'MinuteMan' (a fast-response service for clearing minor incidents such as breakdowns or very minor collisions in order to reduce consequent delays) along the route. Gates within barriers which facilitate the re-routing of traffic should be reviewed.
- (b) **Improvements to technology along the route** – in particular between the M25 junction and junction 29 where it is most heavily trafficked and frequently congested. Various forms of technology are available that should be investigated at specific

points along the route for both capacity and information management. These might include ramp metering and adaptations of managed motorway techniques such as variable speed limits; and variable message signs.

- (c) **Improvements to lay-by and road user facilities** – the removal, replacement or improvement of sub-standard lay-bys and the provision of customer facilities including roadside services. More and better services for heavy goods vehicles should also be investigated to ensure that they are able park both securely and safely when required to take breaks.
- (d) **Collision reduction and incident management** – campaigns to educate drivers on good practice and strong enforcement preventing illegal driving behaviour should be implemented in conjunction with Essex and Suffolk Police and local highway authorities. This should be complementary to the measures identified above with the aim of preventing the incidents caused by driver taking place. Working in partnership with emergency services, staging areas for disabled or recovered vehicles and recovery equipment need to be reviewed.
- (e) **Maintenance** – Improvements to the carriageway and vehicle restraint systems to allow for increased resilience when an incident occurs e.g. provide a hard strip where it currently does not exist along the route where opportunities arise. Opportunities have already been taken where major maintenance has taken place to address some standard deficiencies – this should be continued.

4.2.2

Other short term actions include:

- (a) **Junction improvements** – quick-win schemes should be identified to increase capacity at key stress points on the route.
- (b) **Development of an investment strategy for the route** – working primarily with the local enterprise partnerships to develop an A12/A120 corridor delivery partnership which could then provide a more transparent and effective process for leveraging in private-sector contributions through S.106/CIL, as well as develop strong evidence for funding from other pots such as the regional growth fund and the newly-announced Infrastructure funding.

4.3 Longer term

- 4.3.1 **Develop and deliver a junction optimisation strategy** – this will aim to solve the operational issues on the route and investigate the potential for releasing land for growth. See section 4.5 below which sets out some ideas for unlocking land for development through the review of several key junctions.
- 4.3.2 **Direct accesses to the route** – these should be reviewed and rationalised where possible to either be removed or relocated to address the safety needs of users and reduce interruptions to free flow.
- 4.3.3 **Modal shift** – opportunities to shift demand from road to rail should be investigated, though this could require ongoing resource expenditure and would need to be implemented in cooperation with other responsible bodies.
- 4.3.4 **Improvement to local roads** – for instance, to provide reasonable alternative routes in cases where the traffic needs to be diverted, or to relieve some unsuitable local routes.
- 4.3.5 **Investigate a major upgrade to the A120 between Braintree and Marks Tey** – although this will be the focus of another route-based strategy it is clear that this route section acts as a significant diversion route for the A12 despite being very unsuitable for the purpose. Bringing it up to the standard where it is suitable as a strategic diversion route would significantly increase network resilience within the sub-region, however it is recognised this would require substantial investment.

4.4 Improvements for non-motorised users

- 4.4.1 Whilst cyclists tend not to travel long distances along the route, stakeholders have long sought higher quality provision where there are no alternative parallel cycle-friendly routes; attention to detail when it comes to dropped kerbs, maintenance and conflict points with slip roads; and a system of local directional signing which shows how you navigate using A12 cycle tracks between local destinations.

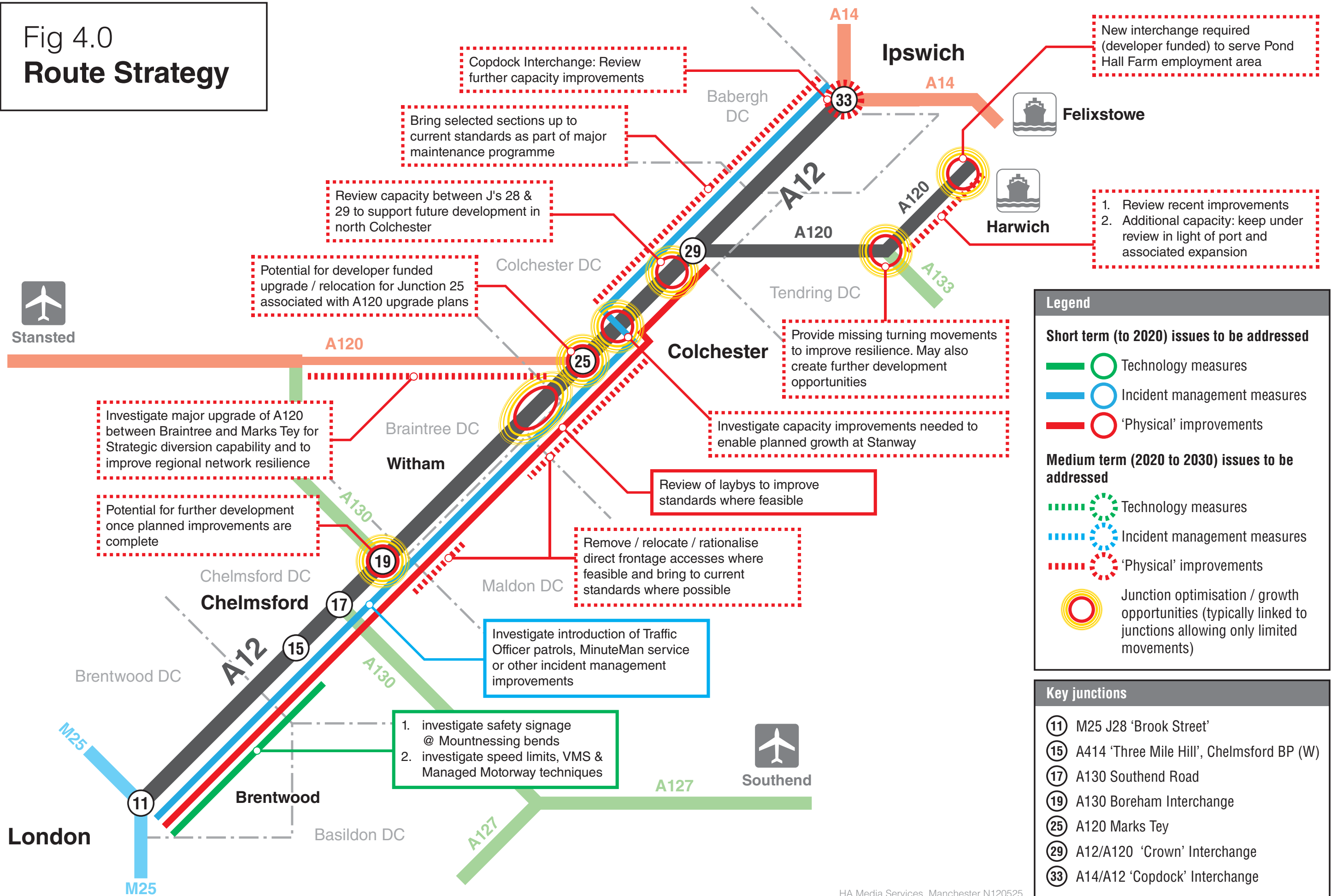
4.5 Facilitating future growth

- 4.5.1 Whilst the A12/A120 can act as a barrier to growth, if the operational issues on the route are resolved, sites that may have previously been rejected or not even considered as potential growth locations may then

become feasible. For instance, at Harwich new access arrangements plus some localised widening may provide an opportunity for port related industry to be considered. Such sites would need to be considered with partners alongside the investment strategy referred to above.

- 4.5.2 The A120/A133 junction currently causes problems particularly on the local road network due to the inability to turn between the A133 and the A120 further east. The provision of these missing movements could also allow for land to be considered for employment/residential use and improve access to south east Colchester.
- 4.5.3 As shown in figures 2.0 and 3.0, demand between junctions 28 and 29 is very heavy. Localised capacity improvements should be investigated as this would help facilitate growth north of Colchester.
- 4.5.4 Although improvements have been made to the Copdock junction with the A14, it remains a key junction along the route and therefore continued assessment of it should take place to ensure it is able to accommodate the current and future growth plans.
- 4.5.5 Several junctions along the route allow only limited movements but can cause significant local difficulties and, in some cases, stifle new development. The potential to provide for these missing movements should be investigated to relieve local bottlenecks and/or provide for new growth sites.

Fig 4.0
Route Strategy



Appendices

Appendix A

List of studies used as part of this strategy:

- London to Ipswich Multi Modal Study (LOIS) (2002),
 - www.lois-mms.co.uk
- A12 Commission to the Inquiry Report (2008)
 - Available via Google or similar from the Essex Partnership Portal website (search: "A12 Inquiry Report")
- Transport and the Economy in the East of England study (TEES) (2008)
 - <http://www.insighteast.org.uk/viewResource.aspx?id=16361>
- A12 Route Management Strategy (June 2001) – (unpublished)
- London to Haven Ports study (Sept 2010) – (unpublished)
- Sustainable Transport Options for the Growing A12/GEMML corridor towns (May 2010).
 - <http://www.insighteast.org.uk/viewResource.aspx?id=18238>

Appendix B

Table 1.0: A12/A120 link standards

Link section	North / eastbound	South / westbound
M25 – J12	D2	D2
J12 – J13	D2	D3
J13 – J15	D3	D2
J15 – J16	D2	D2
J16 – J17	D2	D2
J17 – J18	D2	D2
J18 – J19	D2	D2
J19 – J20a	D3	D3
J20a – J20b	D2	D2
J20b – J21	D2	D3
J21 – J22	D2	D2
J22 – J23	D2	D2
J23 – J24	D2	D2
J24 – J25	D2	D2
J25 – J26	D3	D3
J26 – J27	D3	D3
J27 – J28	D2	D2
J28 – J29	D2	D2
J29 – A14	D2	D2
A120, A12 – A133	D2	D2
A120, A133 – L.Bentley	D2 (with short S2)	D2 (with short S2)
L.Bentley - Parkeston	S2	S2

Table 2.0: A12/A120 major junctions along the route

Junction	Local name	Description
J11/M25 J28	Brook St	3 level GSJ, all movements
J12	Marylands	GSJ, all movement
J13	Trueloves	GSJ, 3 slips (no e/b onslip)
J14	Furze Hill	GSJ, 2 slips (west/south facing) only
J15	Webbs farm	GSJ, all movements
J16	Galleywood	GSJ, all movements
J17	Howe Green	GSJ, all movements
J18	Sandon	GSJ, all movements
J19	Boreham	GSJ, all movements
J20a	Hatfield Peverel S	GSJ with west-facing-only slips
J20b	Hatfield Peverel N	GSJ with east-facing-only slips
J21	Linfields	GSJ, 3 slips (no w/b offslip)
J22	Coleman's	GSJ, all movements
J23	Kelvedon S	GSJ with west-facing-only slips
J24	Kelvedon N	GSJ with east-facing-only slips
J25	Marks Tey	GSJ, all movements, complex slips
J26	Eight Ash Green	GSJ, all movements
J27	Spring Lane	GSJ with west-facing-only slips
J28	Severalls	GSJ, all movements
J29	Crown	3-level GSJ, all movements
J30	Stratford St Mary	Priority junction
J31	Four Sisters	Compact GSJ, all movements
J32	Capel St Mary S	GSJ all movements, 'extended' junction with local connections / accesses
J32a	Capel St Mary	
J32b	Bentley Long Wood	GSJ, all movements
J33/A14 J55	Copdock Mill	GSJ all movements (A14 priority)
(A) A120	Hare Green	GSJ with west-facing-only slips
(B) A120	Little Bentley	Staggered crossroads
(C) A120	Horsley Cross	At-grade roundabout
(D) A120	Ramsey	Roundabout
(E) A120	Parkeston	At-grade roundabout

Table 3.0: carriageway impact data for the period December 2011 – November 2012

A12 (J11-J33) and A120 (A12 to Harwich) Incident types	Number of carriageway impact incidents	Average impact duration (minutes)
Road traffic collision – damage only	72	106.9
Breakdown – in live lane	61	81.7
Debris	40	96.9
Road traffic collision – serious injury	21	155.6
Road traffic collision – minor injury	13	93.8
Event / incident (off network) - unplanned	7	91.9
Other obstruction (excl. breakdown)	6	40.2
Breakdown - hardshoulder	4	66.3
Observation – infrastructure problem	4	270.8
Vehicle fire	3	123.8
Non-hazardous spillage	2	104.3
Road traffic collision – fatal	2	174.0
Animal on network	1	13.2
Anti-social behaviour with vehicle	1	100.7
Heavy rain	1	210.0
Observation – police / VOSA intelligence	1	40.2
Total	239	102.8

Note: A12/A120 not routinely patrolled by Highways Agency Traffic Officers – not all incident statistics will be reported to Highways Agency

Appendix C

Table 4.0 stakeholder priorities for the route

Theme	Issues	Suggested Interventions
Government policy and strategy	<ul style="list-style-type: none"> • Lack of investment in the East of England; • Lack of continuity through successive Governments/ Secretaries of State; • Lack of transparency in decision-making; • Perceived as inhibiting private-sector investment and hence growth. 	<ul style="list-style-type: none"> • Long term government policy; • Transparent decision-making; • Local authority policies on growth would follow; • As would private-sector investment and developer contributions.
Upgrading the route	<p>Links and junctions of poor geometric standard, with road safety, capacity and other issues (in no particular order):</p> <ul style="list-style-type: none"> • Rivenhall slip road: substandard, dangerous and very busy; • Copdock junction: congestion now, so little scope for future growth • Poor dual two-lane carriageway around Chelmsford; • Four Sisters junction substandard; • High levels of congestion at Hare Green; • High levels of congestion at Boreham; • Hatfield Peverel northbound: third party land issues hampering widening like southbound; • Witham bypass: inconsistent mix of standards; • Kelvedon bypass: poor road condition; • High levels of collisions on Suffolk section of A12; • Lack of and poor standard of lay-bys; • Noise issues at Brentwood, Ingatestone and Mounthessing. 	<ul style="list-style-type: none"> • Develop a structured programme of measures to address these deficiencies and bring the route up to a consistent, modern standard; • Solutions to key problems should be prioritised, with a view to having projects ready to deliver when funding is released; • Conversion to motorway (seen as unlikely).
Achieving modal shift	<ul style="list-style-type: none"> • Lack of co-ordination between road and rail investment strategies. 	<ul style="list-style-type: none"> • Improvements to station car parks (e.g. at Manningtree) bring good relief to A12; • Potential to achieve same effect elsewhere, e.g. Marks Tey.

Local road issues	<ul style="list-style-type: none"> • Congestion from other roads affects A12; • A120: no alternative route; • Local village roads poor alternative for local journeys. 	<ul style="list-style-type: none"> • Measures to address the lack of alternative routes; • Clearer road markings and signage.
Active traffic management	<ul style="list-style-type: none"> • Traffic lights programmed inefficiently; • Information boards often perceived as out of date 	<ul style="list-style-type: none"> • Variable speed limits; • Minimum speed limits; • Variable message signs; • HGV overtaking ban; • Average speed cameras; • Prohibition of certain vehicle classes during peak periods; • Active enforcement.
Driver behaviour	<ul style="list-style-type: none"> • Issues such as weaving, frequent lane-changing, undertaking and lane hogging. 	<ul style="list-style-type: none"> • Driver education
Emergency response	<ul style="list-style-type: none"> • Delays following accidents and incidents. 	<ul style="list-style-type: none"> • Prioritise vehicle recovery and traffic management following accidents and incidents
Foreign vehicle drivers	<ul style="list-style-type: none"> • Left-hand drive vehicles. 	<ul style="list-style-type: none"> • Provision of lenses/ mirrors adjacent to the carriageway.

Appendix D

Table 5.0 A12 major maintenance schemes

Year	Location	Length Route Km	Actual Cost
1997/98	Mountnessing	2.32	£7m
1998/99	Boreham	3.59	£6.1m
999/00	Stanway	1.69	£5.6m
2000/01	Brentwood phase 1	3.11	£11.2m
2001/02	Hatfield Peverel	1.49	£6.9m
2002/03	Brentwood phase 2	4.25	£11.2m
2003/04	Witham phase 1	4.08	£11.9m
2004/05	Marks Tey to Kelvedon	5.00	£8.5m
2005/06	Ingatestone	2.38	£8.3m
2008/09	Kelvedon phase 2	2.29	£7.5 m
2009/10	Witham phase 2	1.92	£9.7 m

The forward programme indicates allocations to similar funding levels based on previous financial years. The list is based upon need and is reviewed every year. If the condition of a section deteriorates, it will be moved up the priority list.

Marks Tey to Stanway is structurally in good condition. The ride quality is poor and is further highlighted by the improvements carried out either side at Stanway and Marks Tey to Kelvedon. Proposed maintenance aims to address the ride quality of this section of the A12 by overlaying asphalt.

In summary, there have been nine major maintenance schemes carried out since 1997 at a cost of £77m covering approximately 17 route miles (28 km). This represents 33% of the total length which has been improved. Total length from M25 to A14 Copdock Interchange is 52 miles (84 km).