

## 4 KEY ISSUES AND PROBLEMS

- 4.1 The problems and issues identified in Stage One of the study can be broadly categorised into one of five categories:
- ❑ Transport capacity for national and regional movements along the corridor
  - ❑ East-west movements at Ipswich
  - ❑ Access to Bury St Edmunds
  - ❑ Access to Newmarket
  - ❑ Severance effect of the corridor / local community accessibility.
- 4.2 The main issues under each of these headings are discussed below. A broad indication is also provided of the scale and severity of each problem, as well as the regional objectives (see paragraph 6.30) which they affect. Scale refers to the number of people or vehicles affected by the problem, whilst severity relates to the level by which a certain threshold or capacity is exceeded.
- 4.3 Traffic forecasts presented in this Chapter are generally taken from the Highways Agency East of England Transport Model (EETM) and specifically the model runs that have been commissioned by the Highways Agency to test alternative scenarios from the draft East of England Plan.
- 4.4 The Modelling Report for the EETM considered that the validation of highway model was successful in view of the size of the Study Area and the complexity of the network. Validation concentrated on the trunk road network and, whilst efforts were made to ensure that satisfactory replication of flows on local roads was achieved, the quality of the local road validation was on occasion sacrificed to achieve a good trunk road validation. The report therefore recommended that caution should be used when utilising the model to assess road schemes or strategies at a local level. In urban areas, emphasis was placed on ensuring the correct volume of traffic to and from each area, although the distribution between radial routes may not be sufficiently accurate to assess schemes at a local level. It is also important to note that the model only includes inter-urban trips.
- 4.5 A good validation was also achieved for the EMME/2 rail model. Whilst a lack of independent data inhibited the proper validation of the bus model, it was considered satisfactory for the purposes of the Highways Agency work.
- 4.6 In summary, the Modelling Report concluded that the model is a robust tool suitable for the strategic evaluation of planning scenarios and schemes, and has the potential for further usage, either in terms of further work associated with examining the effects of the East of England proposals or the evaluation of other major transport schemes in the East of England Area. The model is therefore suitable for use in this study, but its outputs need to be treated with the normal caution associated with such models during Stage 2 of the study.

- 4.7 Light goods vehicle trips are assumed to increase at the same rate as employers business trips, whilst forecasts of heavy goods vehicle movements were taken from those developed for the LSM using the Strategic Rail Authority's Freight Demand Model. The latter reflects changes in growth for different ranges of trip length and the approximate range of commodities transported to, from or within the area. The factors used are based on achievement of the SRA's target of an 80% increase in rail freight carried by 2010, but no further rail freight growth thereafter. Growth of HGVs at the ports is therefore NOT specifically taken into account.
- 4.8 For the purposes of this Study, outputs from existing model runs were requested from the Highways Agency's consultants. Information was provided from the following scenarios:
- 2001 base year
  - 2021 Planning Scenario F3 / Core RTS. Planning Scenario F3 corresponds to the Draft East of England Plan, whilst the Core RTS scenario includes committed schemes plus the majority of those schemes/projects accorded Priority A or B in the Regional Transport Strategy, and reflects the Highways Agency view of the most likely schemes to be delivered.

#### **Transport Capacity for National and Regional Movements along the Corridor**

- 4.9 The transport infrastructure in the corridor plays a vital role in the international, inter-regional and regional movement of passengers and goods. The A14(T) is part of the Trans European Transport Network, and is defined by the Department for Transport as a trunk road of national importance. A number of problems were identified in Stage One of the study that threaten or weaken the ability of the corridor to provide this function:
- Lack of W10 gauge clearance on the cross-country route to the WCML
  - Single railway track sections
  - Various rail signalling and speed constraints
  - Highway link capacity issues either existing or in the future at the following locations:
    - Orwell Bridge
    - Between A11(S) and A11(N)
    - On the A14 to the west of the study corridor between Newmarket and Cambridge
  - Junction capacity issues either existing or in the future at the following locations:
    - Nine Mile Hill (J36)
    - Newmarket A142 Interchange (J37)
    - Newmarket Waterhall (J38)
    - St Saviours Interchange (J43)
    - Moreton Hall Interchange (J44)
    - White House Interchange (J53)

- Sproughton Interchange (J54)
  - Copdock Interchange (J55)
  - Seven Hills Interchange (J58)
- Poor linkages between the A14 and A11(N)
  - Deficiencies in the provision of off-street lorry parks

*Lack of W10 gauge clearance on the cross-country route to the WCML*

4.10 The proportion of 9' 6" "high cube" containers has increased significantly in recent years and is expected to compromise about half the number through the Haven Ports by 2010. To carry these containers on standard wagons requires the provision of W10 gauge clearance. Whilst work has recently been completed to provide W10 gauge clearance on the route from the Haven Ports to the West Coast Main Line via London, this clearance is not available on the direct route from Ipswich via Peterborough (East Coast Main Line) to Nuneaton (West Coast Main Line). The route via London is heavily constrained with only a limited number of paths available on certain key sections. In addition the haul distance from the Haven Ports to the North of England is significantly longer via North London, making rail haul unattractive for a number of operators. Gauge clearance on the cross-country route is therefore required to maximise modal shift of containers from road to rail.

<b>Problem: Lack of W10 Gauge Clearance on Cross-Country Route</b>	
Scale:	Medium. Up to a 1000 additional HGVs per day on the A14 corridor as a consequence of limited gauge clearance.
Severity:	High – 9'6" containers cannot currently be hauled cross-country
Objectives affected:	R1, R10

*Single railway track sections*

- 4.11 The route from east of Newmarket (Chippenham junction) to Cambridge is single track for approximately 16 miles with a single passing loop at Dullingham. This severely restricts the capacity of this section, limiting the ability to improve rail passenger services between Cambridge, Newmarket and Ipswich.
- 4.12 On the Chippenham junction to Ely route there is a single track section between Soham and Ely for a distance of approximately 5 miles. This produces some operational limitations although the effect of this restriction is not critical.
- 4.13 The branch line between Felixstowe Beach Junction north of Felixstowe Docks and Ipswich is single track for approximately 12 miles. This section provides the only rail access to the Felixstowe Docks and is also used by passenger services between Ipswich and Felixstowe town. This severely restricts the availability of paths for freight services into and out of Felixstowe Port. As part of the Felixstowe South reconfiguration proposals there are commitments to double this section of track

<b>Problem: Single Track Railway Sections</b>	
Scale:	Medium. Affects ability to improve passenger and rail freight services.
Severity:	Medium. Lack of increased capacity affects modal shift and introduces additional traffic onto the A14 corridor.
Objectives affected:	R1, R5, R6, R8, R10, R11

*Various rail signalling and speed constraints*

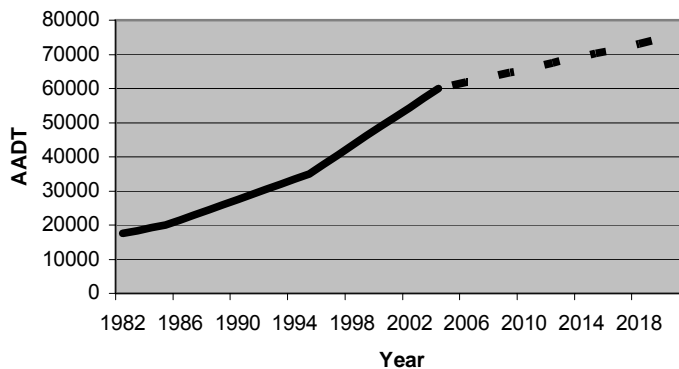
4.14 From west of Haughley (north of Stowmarket) through to Chippenham junction (east of Newmarket) the line is non-electrified with some sections controlled by manual mechanical signal boxes with absolute block signalling. In addition there are sections where the speed is limited to 30 mph as a function of both the signalling regime and some siting and alignment deficiencies. From Chippenham junction through to Cambridge the route is single track partly controlled with manual boxes and a Tokenless block signalling system. This severely restricts the capacity of this section of the route. The overall effect of the combined signalling and speed constraints is to restrict the ability to improve both passenger and freight services on the route between Ipswich, Newmarket, Cambridge and Ely.

<b>Problem: Various Rail Signalling and Speed Constraints</b>	
Scale:	Medium. Severely restricts the provision of improved rail services
Severity:	Medium. Restriction on passenger and freight services with consequential increases in vehicle traffic on A14.
Objectives affected:	R1, R3, R5, R6, R7, R8, R10 and R11

*Orwell Bridge*

4.15 The Orwell Bridge carries the dual-2 A14 over the River Orwell and was opened to traffic in December 1982. It lies to the south of Ipswich and forms part of the Ipswich Southern Bypass. This section of the A14 also links the northern and southern sections of the A12, and is therefore clearly a crucial element in the national trunk road network. It also serves regional and local functions, as discussed elsewhere.

4.16 Since opening, average daily traffic has increased rapidly from 17,500 in 1982, to 20,000 in 1985, 35,000 in 1995, and to 60,000 in 2004. This represents growth over the period 1994-2004 of 6.2% per annum, which compares to the national average on major roads of 1.7% per annum between 1994 and 2003 (the latest year for which data is available).



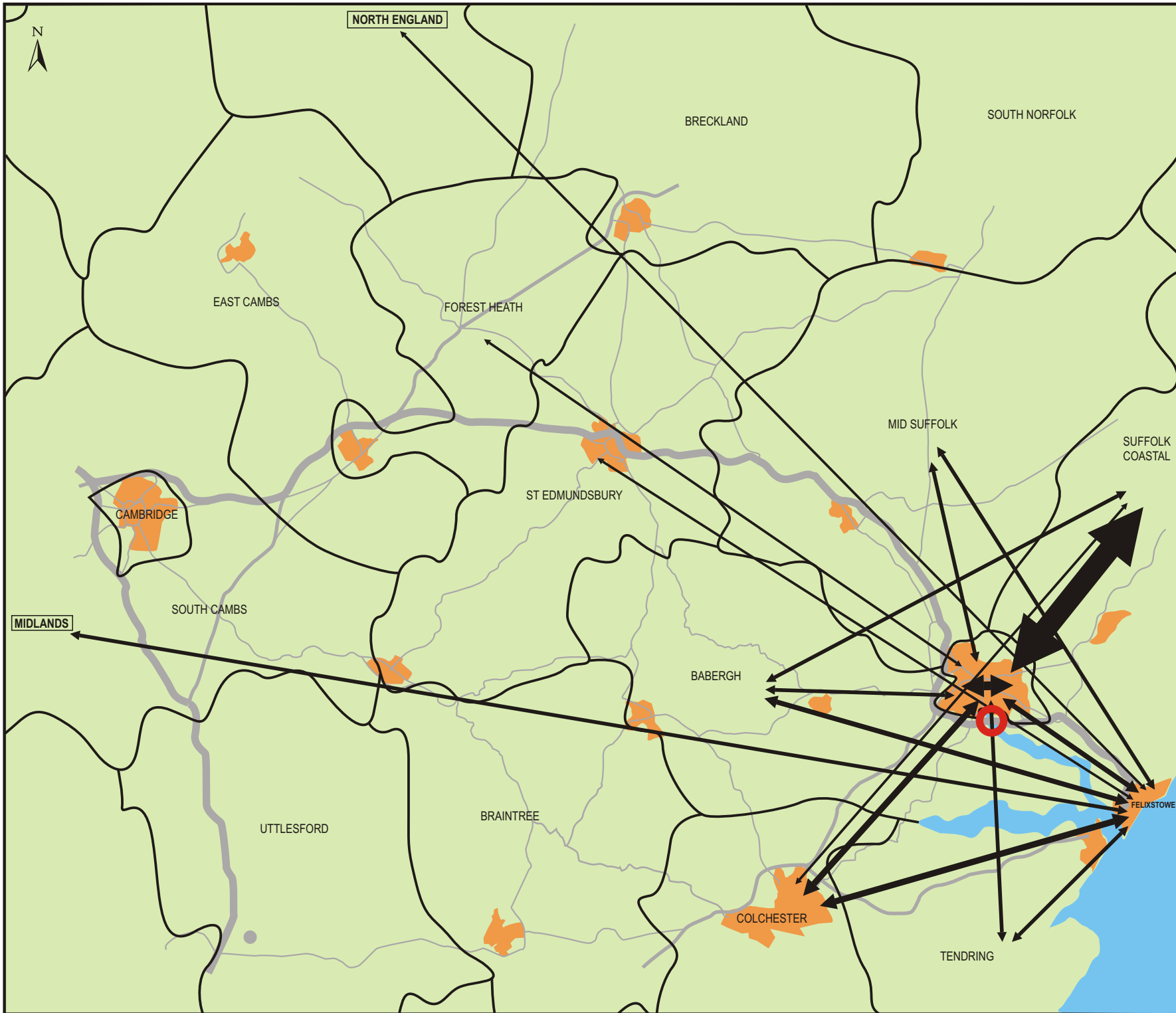
4.17 Existing peak hour traffic flows are in the order of 2,400 - 3,000 vehicles per direction, whilst the Highways Agency have estimated the ratio (stress level) of Congestion Reference Flow (CRF) to Annual Average Daily Traffic (AADT) to be around 0.83. The CRF is a standard measure and represents an estimate of the AADT at which the road is likely to be congested in the peak periods on an average day. When the CRF is reached (i.e. a stress level of 1.0), hourly traffic demand is likely to exceed the maximum hourly throughput of the link, with the result that traffic flow breaks down with speeds varying considerably, average speed drops significantly, and the sustainable throughput is reduced and queues are likely to form.

- 4.18 Demand on the Orwell Bridge is forecast to increase in the future. The Highways Agency, in the A14 Girton to Felixstowe Congestion Study, forecast that the stress level on the Orwell Bridge will increase to 0.90 in 2009 and 0.98 in 2014. The Highways Agency East of England Transport Model indicates that, by 2021, daily traffic volumes may have reached 76,000, representing a stress level in the order of 1.12. In the morning peak period, the model forecasts an eastbound “demand” flow of over 4,400 pcus, compared to an “actual” flow of 3,400. This suggests that over 30% of the demand in the peak hour will not actually be able to flow through the link because of congestion.
- 4.19 Analysis of outputs from the East of England Transport Model reveals some interesting information on the origins and destinations of traffic on the Orwell Bridge. As illustrated in Figure 4-1, the major movement on the bridge in 2021 is expected to be trips between Suffolk Coastal district and Ipswich. Other key movements include trips within Ipswich, between Colchester and Ipswich, Colchester and Felixstowe, Babergh and Felixstowe, and Ipswich and Felixstowe. To better understand the nature of usage of the Orwell Bridge, and other key links in the corridor, an analysis was undertaken of the district origins and destinations of trips in order to establish a broad impression of the mix of local, regional and national traffic. In the absence of no clear definition of the different types of traffic, the following assumptions were used:
- Local traffic – trips within a single district or between adjacent districts
  - Regional traffic – other trips totally within the East of England
  - National traffic – all other trips.
- 4.20 There are clearly limitations with this approach in that links to the western end of the corridor are more likely to have a higher proportion of national trips, as they are closer to the eastern boundary of the East of England. Also the juxtaposition of districts affects the proportion of the trips that are allocated to the “local” category. However, the approach is relatively easy to understand and apply, and provides a useful indicator.
- 4.21 Using the definitions described above, the model suggests that 41% of traffic on the Orwell Bridge is local, 48% is regional, and 11% is national.
- 4.22 It is clear that capacity on the Orwell Bridge will become an increasingly important issue, affecting movement at national, regional and local levels. Congestion will result in slower and more unreliable journey times and will adversely impact on many of the objectives for the corridor. Virtually all traffic to/from the Port of Felixstowe uses the Orwell Bridge, meaning the efficiency of the international port, transport and logistics industry will be affected.

<b>Problem: Link Capacity on Orwell Bridge</b>	
Scale:	High - affects 103,000 people and 12,000 goods vehicles per day
Severity:	High (high stress level and high v/c ratio)
Objectives affected:	R1, R2, R4, R5, R9, R14

*A14 Between A11(S) and A11(N)*

- 4.23 Between the southern and northern sections of the A11 trunk road, the A14 provides three lanes in each direction. It carries in excess of 70,000 vehicles per day. According to the



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<b>KEY</b> Road Network District Boundaries Flow of Traffic Analysis Location		
Based on output from East of England Transport Model: - 2021 Scenario F3 Core RTS		
Integrated Transport Planning Ltd 50 North Thirteenth Street Central Milton Keynes MK9 3BP Tel: 01908 259718 Fax: 01908 605747 <a href="http://www.itpworld.net">http://www.itpworld.net</a> email: mail@itpworld.net		
Client East of England Development Agency east of england Regional Assembly		
Project <b>NEWMARKET TO FELIXSTOWE          CORRIDOR STUDY</b>		
Drawing Title <b>Principal AM Peak Movements on Orwell Bridge</b>		
Scale NA	Date March 2005	
Drawing Number <b>Figure 4-1</b>	Rev -	

Highways Agency A14 Congestion Study, the stress level of this section of the A14 will rise to 0.82 in 2014, and, according to the Highways Agency East of England Transport Model, congestion during the morning peak hour is expected in 2021.

- 4.24 As illustrated in Figure 4-2, this section of the A14 is important for regional and national traffic, with important regional movements between Cambridge and Forest Heath, Breckland and St Edmundsbury. Major national movements exist between Felixstowe/Suffolk Coastal and the Midlands/North of England and between Norfolk and London. Overall, 32% of traffic on this section might be termed national, 65% regional and 4% local.

<b>Problem: A14 (A11S – A11N) Capacity</b>	
Scale:	High - affects 100,000 people and 17,000 goods vehicles per day
Severity:	Medium (relatively high stress level and v/c ratio)
Objectives affected:	R1, R3, R4, R8, R9, R14

*A14 between Newmarket and Cambridge*

- 4.25 The A14 between Newmarket and Cambridge extends beyond the strict definition of the study corridor, but is clearly important in terms of providing access to the corridor. Between the Girton and Stow Cum Quy Interchanges, AADTs currently range between 55,000 and 68,000. The Highways Agency A14 Congestion Study estimates existing stress levels between 0.87 and 0.92, rising to between 1.04 and 1.09 by 2014. These are higher than any other section on the A14 between Girton and Felixstowe.
- 4.26 This section clearly provides the principal access between Suffolk and Cambridge and the national motorway network via the M6/M1/A14 interchange. It is also a vital link within the Cambridge sub-region and the economic development ambitions therein.

<b>Problem: A14 (Newmarket – Cambridge) Capacity</b>	
Scale:	High - affects 103,000 people and 16,000 goods vehicles per day
Severity:	High (very high stress level)
Objectives affected:	R1, R2, R3, R4, R8, R9, R14

*A14 at Bury St Edmunds*

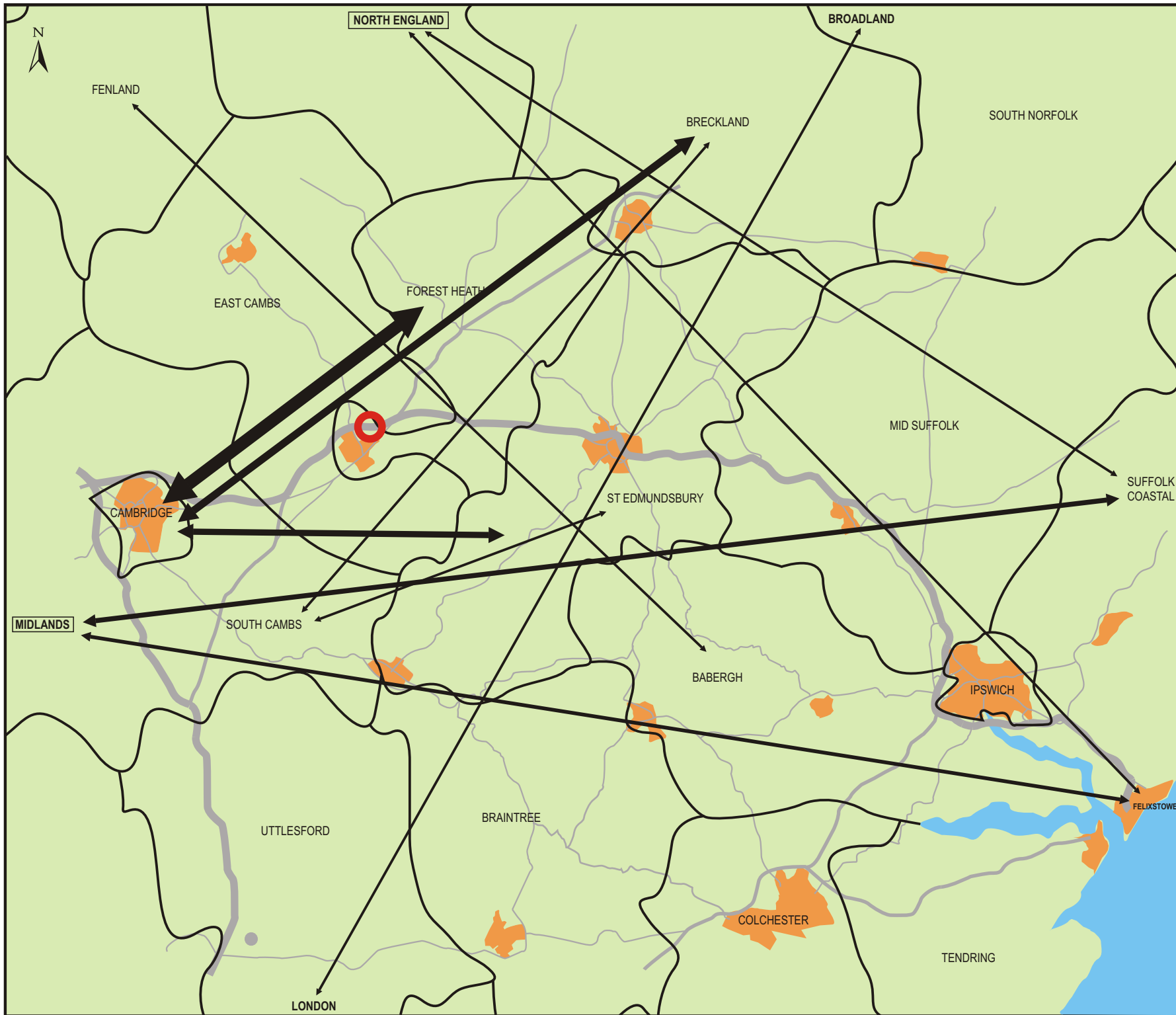
- 4.27 The A14 at Bury St Edmunds currently carries around 45,000 vehicles per day, with a highest stress level of 0.71. The A14 Congestion Study predicts an increase in the stress level to 0.84 in 2014, although the East of England Transport Model does not forecast this section to reach capacity before 2021.

<b>Problem: A14 at Bury St Edmunds Capacity</b>	
Scale:	Medium - affects 60,000 people and 14,000 GV's per day
Severity:	Medium (relatively high stress level and v/c ratio)
Objectives affected:	R1, R3, R4, R7, R8, R9, R14

*A14 Ipswich Western Bypass*

- 4.28 The A14 Congestion Study also identifies the Ipswich Western Bypass as approaching capacity by 2014. The Study provides the following forecast stress levels:

- J51 Beacon Hill - J52 Claydon 0.85
- J52 Claydon - J53 Ipswich White House 0.96
- J53 Ipswich White House - J54 Sproughton 0.85



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<b>KEY</b> Road Network District Boundaries Flow of Traffic Analysis Location		
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 East of England Development Agency		 Regional Assembly
Project <b>NEWMARKET TO FELIXSTOWE          CORRIDOR STUDY</b>		
Drawing Title <b>Principal AM Peak Movements on A14 Between          A11(N) and A11(S)</b>		
Scale NA	Date March 2005	
Drawing Number <b>Figure 4-2</b>	Rev -	



- ❑ J54 Sproughton - J55 Copdock 0.92
- ❑ J55 Copdock - J56 Wherstead 0.95

4.29 The East of England Transport Model suggests more spare capacity with a maximum v/c ratio of 0.77 on these sections in 2021.

<b>Problem: A14 at Ipswich</b>	
Scale:	High - affects >90,000 people and 12,000 goods vehicles per day
Severity:	Medium-High (high stress level and relatively high v/c ratio)
Objectives affected:	R1, R2, R3, R4, R5, R9, R14

*Junction Capacity Issues*

4.30 The Highways Agency A14 Congestion Study identifies a number of junctions where congestion affects, or is expected to affect, traffic on the A14 main line. Two principal causes can be identified:

- ❑ Type A – when a junction reaches capacity and causes traffic to queue back down the off-slip and on to the A14, effectively reducing the main line to one lane
- ❑ Type B – traffic diverging off the main line into a single lane on approach to the diverge, leading to this approach lane reaching critical capacity.

4.31 Table 4-1 identifies those junctions where such problems are expected.

**Table 4-1: Junction Problems Affecting A14 Main Line Operations**

	<b>E/B</b>	<b>W/B</b>
<b>Existing Problems identified in A14 Congestion Study</b>		
Milton (J33)	Type A	Type A
St Saviours (J43)	Type A	Type A
Moreton Hall (J44)	Type A	Type A
White House (J52)	Type A	No
Copdock (J55)	Type A	No
<b>Future Problems identified in A14 Congestion Study</b>		
Histon (J32)	Type A	Type A
Stow Cum Quy (J35)	Type A	Type A
Nine Mile Hill (J36)	No	Type B
Waterhall (J38)	Type B	No

<b>Problem: A14 Junction Capacity Problems</b>	
Scale:	Varies depending on location
Severity:	Varies depending on location
Objectives affected:	Varies depending on location

*Poor Linkages between the A14 and A11(N)*

4.32 The consultation process revealed concerns over the impact of traffic, particularly HGVs, using unsuitable routes for the east-northwest movement between the A14 and the A11. A 7.5 tonne lorry ban exists on the A1088 between Woolpit on the A14 west of Stowmarket and Ixworth. Alternative routes are the A134 between Bury St Edmunds and Thetford, the A1101 between Bury St Edmunds and the Fiveways junction at Mildenhall, and the B1106 between Bury St Edmunds and Brandon. The use of the C624 through Tuddenham was

effectively eliminated by a Highways Agency scheme in 2003 stopping the right turn from the C624 on to the A11 at Chalk Hill.

- 4.33 Currently, it is understood that the main problem lies on the A134 and in particular through the village of Ingham.

<b>Problem: Poor Linkages between the A14 and A11(N)</b>	
Scale:	Medium – affects a number of villages
Severity:	Not known – insufficient data available
Objectives affected:	R4

*Deficiencies in the provision of off-street lorry parks*

- 4.34 The steady increase in the number of HGVs in Suffolk has led to growing pressure on the transport network and surrounding environment and has become a concern to many local communities. Suffolk’s trunk road network has seen an increase in daily HGV traffic movements, between 1985 and 2004, from about 100,000 to 175,000. Although there has been some transfer of freight from road to rail, road transport remains the dominant mode for many shippers. A particular concern is the problem of HGV parking on the A14. Overnight laybys along the road are usually heavily used by parked HGVs which has the effect of reducing opportunities for vehicles to pull off the road in an emergency. HGV parking at Red Lodge has also been identified as a particular concern by Forest Heath District Council, as the old A11 is wide and often used by drivers for rest breaks.

- 4.35 The HGV Parking Overview and Scrutiny Panel was set up by Suffolk County Council in 2001 and a two stage HGV Parking Study was carried out. The first stage was to establish the scope and nature of lorry parking through extensive consultation and the second stage was to identify actions to minimise the impact on local communities. A key objective was to shape strategic and local policies in the Local Transport Plan for 2006-2011 and influence future plans for lorry parking provision in Suffolk.

- 4.36 The results of the consultation process carried out in Stage 1 of the HGV Parking Study highlighted two main areas of concern:

- HGV parking in unsuitable locations throughout Suffolk, resulting in noise, disruption, visual impact, damage, obstruction, litter and soiling;
- Inadequate parking for HGVs and facilities for drivers on the main strategic routes. Both HGV operators and drivers described the limited availability of suitable parking places as a major problem in Suffolk and personal safety and comfort of the drivers together with the security of the vehicle were highlighted as key factors.

<b>Problem: Deficiencies in the Provision of Off-Street Lorry Parks</b>	
Scale:	High – reported as a significant problem by SCC and St Edmundsbury, Forest Heath and Mid Suffolk District Councils
Severity:	High – as above
Objectives affected:	R1, R5, R7, R9

**Access to and around Ipswich**

*Link Capacity on Orwell Bridge*

4.37 As discussed above (para 4.15), the Orwell Bridge is currently operating close to capacity in the peak hours, and this situation is expected to worsen significantly in the future. The Highways Agency East of England Transport Model suggests that a significant proportion (41%) of the traffic using the bridge during the peak hours is local (between Ipswich and a neighbouring district). Table 4-2 presents a further analysis of outputs from the transport model and suggests that in 2021 home-based work (HBW) trips account for 26-32% of trips on the bridge during the morning peak hour. Car trips for other purposes, including home-based school, home-based other, employers’ business and non-home-based, account for a further 43-44%. Goods vehicles account for 25-31%, of which port-related trips are 10-13%, although it should be remembered that these model outputs do not reflect increased port throughput arising from Felixstowe South Reconfiguration or Bathside Bay.

**Table 4-2: AM Peak Flow Composition on Orwell Bridge**

	<b>Eastbound</b>	<b>Westbound</b>
Port-related goods vehicles	10%	13%
Other goods vehicles	15%	18%
HBW cars	32%	26%
Other cars	43%	44%
Total	100%	100%

4.38 It is thought that the heavy local use of the Orwell Bridge is in part attributed to motorists seeking the most convenient radial route into Ipswich for their final destination. For example, some traffic from the west bound for areas in the east of Ipswich will use the A14 as a bypass, cross the Orwell Bridge and then use the A1189 to enter the town. This type of route choice reflects the excess of demand over capacity for movements across Ipswich town centre.

<b>Problem: Link Capacity on Orwell Bridge</b>	
Scale:	High - affects over 10,000 people and 12,000 goods vehicles per day
Severity:	High (high stress level and high v/c ratio)
Objectives affected:	R1, R2, R4, R5, R9, R14

*Junction Capacity Problems*

4.39 Table 4-1 reports on the findings of the A14 Congestion Study and identifies a number of junctions on the Ipswich area where there are either existing congestion problems, or where they are expected to occur in the future, which impact on the flow on the A14 mainline. These include:

- Junction 53 – White House. The A14 Congestion Study reported that queuing regularly occurs on the eastbound off-slip and occasionally back on to the A14 itself, and that the following factors contribute to the problem:
  - Close proximity of Junction 52 (Claydon)
  - Weaving movement between traffic joining the A14 at Junction 52 and traffic leaving at Junction 53
  - Significant volumes of traffic using the A14 for just one section (J52 to J53)

- Insufficient capacity on the roundabout caused by traffic exiting from the westbound A14 and travelling towards Ipswich
  - Blocking back from the A1156 interfering with the operation of the roundabout
- Junction 55 – Copdock. Problems at this junction are well-known and well documented. This junction forms the interchange between the A14, the A12 and the A1214 London Road to Ipswich town centre. The A14 Congestion Study reported that congestion is a serious issue, particularly for A12 northbound traffic, with regular queuing back on to the A12 towards Capel St Mary. This queuing also blocks access to the A12(S) to A14(W) segregated lane. The problem results in some traffic leaving the A12 at Capel St Mary and rat-running through Sproughton on the B1113. This, in turn, leads to congestion elsewhere, including the A1071/B1113 roundabout junction. Previous surveys indicate that approximately half of the traffic on the A14, in both directions, turns through the junction, mainly to and from the A12(S).

4.40 Whilst acknowledging the limitations of the model, the East of England Transport Model also identifies a number of additional junctions where problems are expected by 2021. These problems do not necessarily result in problems on the A14 mainline, but indicate operational problems for traffic using the junction. The congested junctions identified by the model include:

- Junction 54 – Sproughton. The model suggests that the following movements may become over-capacity:
  - Eastbound off-slip
  - Eastbound on-slip
  - Westbound on-slip
- Junction 58 – Levington Seven Hills. The model suggests that the following movements may become over-capacity:
  - Westbound off-slip
  - A12 southbound.

4.41 The above indicates that four of the six principal A14 junctions providing access to Ipswich town centre will be subject to congestion, at times and at some locations, severe. This is a major issue affecting the development and growth of Ipswich, and affects many of the regional objectives for the corridor.

<b>Problem: A14 Junction Capacity Problems</b>	
Scale:	Very high (affecting the majority of movements into/out of Ipswich)
Severity:	Medium to very high, depending on location
Objectives affected:	R1, R2, R3, R4, R5, R8, R9, R14

*Diversion Routes through Ipswich*

4.42 In the event of incidents on the A14 Ipswich Southern Bypass, including the Orwell Bridge, the diversion route for traffic is through Ipswich along the A1214. At busy times, when this route becomes congested, drivers find alternative routes, including through the town centre. Previous studies have estimated that the total volume of traffic over a north-south

screenline in Ipswich is approximately 100,000 vehicles per day. During peak periods, it is reported that links across this screenline are operating close to or at capacity. It is clear that, with approximately 60,000 vehicles a day using the Orwell Bridge, the impact on east-west links in Ipswich of closing one carriageway is significant.

- 4.43 As traffic volumes increase, both on the A14 and in Ipswich town centre, both the scale and the severity of the problem will increase. In the future, higher traffic levels will result in an increased frequency of incidents and a higher volume of traffic being diverted on to roads with already higher levels of traffic.
- 4.44 Diversion of traffic to agreed routes is currently undertaken by the police in response to an incident. Drivers are advised to follow the diversion route.
- 4.45 There is a perception locally that the number of incidents resulting in the diversion of traffic through Ipswich is increasing. Table 4-3 shows the number of accidents on the A14 mainline between Junctions 55 (Copdock) and 57 (Nacton), where closure would result in traffic being diverted through Ipswich according to the Highways Agency Area 6 Emergency Diversion Route Report. Without more detailed information on the nature of these accidents and whether diversion routes were initiated by the police, it is not possible to conclude that all these accidents resulted in diversions, but the Table provides a useful indicator on the accident trends on this section of the A14. The most recent data, 2004, is very much in line with the long term accident frequency, although significantly higher than the 2003 number. This may explain the perception of the recent increased frequency. Also, the number of accidents in the peak periods (0730 to 0930, 1630-1830) was higher in 2004 than any of the previous four years.

**Table 4-3: Accidents on A14 Between Junctions 55 and 57**

	2000	2001	2002	2003	2004
Slight	12	12	13	3	10
Serious	2	0	1	1	2
Fatal	0	0	0	0	0
<b>Total</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>4</b>	<b>12</b>
Peak	6	3	8	3	9
Off-peak	8	9	6	1	3
<b>Total</b>	<b>14</b>	<b>12</b>	<b>14</b>	<b>4</b>	<b>12</b>

**Problem: Impact of Diversions through Ipswich**  
 Scale: Very High (affecting movements in and around Ipswich)  
 Severity: Medium to very high, depending on time of day  
 Objectives affected: R1, R2, R3, R4, R5, R8, R9, R14

*Town Centre Traffic Congestion*

- 4.46 The consultation process identified issues related to traffic congestion in Ipswich town centre in general, and related to east-west movements, in particular.

**Problem: Town centre traffic congestion in Ipswich**

Scale:	Not known – inadequate data available – but likely to be high
Severity:	Not known, but likely to high in the peak periods
Objectives affected:	R2, R3, R5, R8, R9, R12, R13, R14

*Air Quality Issues*

- 4.47 Air Quality issues in the vicinity of Copdock Interchange are reaching the point where an Air Quality Management Area (AQMA) process may need to be initiated.

<b>Problem: Air Quality issues in Ipswich</b>	
Scale:	Low (affecting population in vicinity of interchange)
Severity:	Medium
Objectives affected:	R4, R5, R6, R8, R9

**Access to Bury St Edmunds**

*Junction Capacity Issues*

- 4.48 As discussed above, both Junction 43 (St Saviours) and 44 (Moreton Hall) currently suffer from congestion. St Saviours Interchange has very short slip roads and traffic queues back from both the eastbound and west bound off-slips onto the main line A14 during the morning peak hour. There is also extensive queuing on the A134 dual carriageway approach from the north. Surveys undertaken as part of the A14 Congestion Study revealed extensive queuing on the westbound off-slip and on to the main carriageway, and on the A134 approach, a 400m queue was observed. On the eastbound off-slip, however, little queuing was observed during the survey.
- 4.49 Further extensive queuing was observed exiting the junction towards the city centre, and analysis indicated that this limited exit capacity was constraining the capacity of the junction.
- 4.50 Moreton Hall Interchange is a two bridge grade separated signal controlled roundabout. From the consultations undertaken as part of this study, and for the A14 Congestion Study, it is understood that the interchange suffers from serious congestion problems every morning, and that there is strong local pressure to improve the junction.
- 4.51 Priority is given to traffic leaving the A14, which leads to extensive queues along Bedingfield Way, which is the southbound approach to the interchange for local traffic. Local reports indicate that queues are common onto the A14 mainline from the westbound off-slip, and that a similar problem sometimes occurs in the eastbound direction. Surveys undertaken as part of the A14 Congestion Study found little queuing on either the eastbound or westbound off slips, but did show southbound queuing on the Bedingfield Way approach to the junction and exiting the junction towards Bury St Edmunds.
- 4.52 The A14 Congestion Study concluded that the junction operates at capacity in the morning peak, but that capacity is actually constrained by limited exit capacity towards Bury St Edmunds.

<b>Problem: Junction Capacity Issues at Bury St Edmunds</b>	
Scale:	Medium – High
Severity:	High
Objectives affected:	R1, R3, R4, R7, R8, R9, R13, R14

*North South movements*

- 4.53 The section of the A14 between the Moreton Hall and St Saviours interchanges also serves north-south movements between the A134 to the south and the A134 and A143 to the north. The East of England Transport Model suggests that this does not result in capacity problems on the A14 itself, but this movement almost certainly contributes to the problems described above at the two interchanges.

*A14 Barrier*

- 4.54 The A14 divides Bury St Edmunds, with largely residential development and the British Sugar factory site to the north, and the historic core, commercial and other residential areas to the south. There are a number of opportunities to cross the A14. Between the Westley and St Saviours Interchanges, Beetons Way and Fornham Road pass under the A14. Between St Saviours and Moreton Hall Interchanges, there are opportunities at Eastgate Street and a footbridge linking Shakers Lane with the centre to the west of the A14.
- 4.55 In the context of this study, the barrier effect has its biggest impact in the way that traffic wishing to cross the A14 is predominantly routed across the St Saviours and Moreton Hall interchanges, contributing to congestion and problems with the operation of these interchanges.

<b>Problem: A14 Barrier effect at Bury St Edmunds</b>	
Scale:	Medium – High
Severity:	Medium – High
Objectives affected:	R3, R4, R7, R8, R9, R14

*Town centre traffic congestion*

- 4.56 Whilst not specifically highlighted as an issue during the consultation process, traffic circulation and congestion in Bury St Edmunds is clearly an area that needs to be addressed. As discussed above, the interface between the A14 and the local road network creates a number of problems. At the St Saviours interchange, analysis suggests that lack of capacity in the local road network results in queuing on the westbound off-slip of the A14, and back on to the main carriageway. At Moreton Hall Interchange, on the other hand, priority is provided to traffic leaving the A14 with resulting traffic queues on Bedingfield Way.
- 4.57 The problem of traffic congestion in Bury St Edmunds is clearly closely related to the other issues identified above, and, together, represent a constraint on future development in the town and district.

<b>Problem: Traffic congestion in Bury St Edmunds</b>	
Scale:	Medium – High
Severity:	Medium – High
Objectives affected:	R3, R4, R7, R8, R9, R13, R14

*Air quality issues*

- 4.58 Four AQMAs in Bury St Edmunds relating to relatively small numbers of houses in the vicinity of the A14 were revoked in 2003. Whilst this is not a significant problem at present,

it is an issue that will need to be considered in the development of a transport strategy to support land use and economic development in the town.

<b>Problem: Air quality issues in Bury St Edmunds</b>	
Scale:	Low
Severity:	Low
Objectives affected:	R3, R4, R7, R8, R9, R14

**Access to Newmarket**

*Junction capacity issues*

- 4.59 The principal points of access to Newmarket from the A14 are at the following junctions:
  - ❑ Junction 36 – Nine Mile Hill – A11/A1303
  - ❑ Junction 37 – Exning - A142
  - ❑ Junction 38 – Newmarket Waterhall – A11/A1304
  
- 4.60 The consultation process suggested that Junction 37 suffers from congestion problems in the morning peak, and, as discussed above, the A14 Congestion Study identifies junctions 36 and 38 as locations where congestion is likely to occur in the future.
  
- 4.61 At junction 36, a single lane is provided for the diverge movement of westbound traffic towards the A11. Congestion Reference Flow calculations in the A14 Congestion Study Report indicate that the interchange operates over capacity in the morning peak. Although no problems are currently observed, there is clearly a concern that any increase in flows could result in a significant congestion problem. No problems, existing or future, were identified in the Congestion Study for movements on the A1303 into Newmarket.
  
- 4.62 At Junction 37 (Exning), local consultations suggested that queuing is a problem in the morning peak period, particularly on the westbound off-slip. This arises because of the high traffic volumes on the A142 which makes exiting from the slip road a problem, particularly for the right turn towards Soham and Ely. As traffic increases in the future, this problem is likely to worsen and affect travel into Newmarket.
  
- 4.63 At Junction 38 (Newmarket Waterhall), a single lane is provided for the eastbound diverge towards the A11(N) towards Mildenall, Thetford and Norwich. Similar to Junction 36, the A14 Congestion Study found no existing observed problem, but CRF calculations suggest that the movement is close to capacity and that any increase in traffic would result in a congestion problem. There are no known or forecast problems for the A1304 into Newmarket.

<b>Problem: Junction Capacity Issues at Newmarket</b>	
Scale:	Medium
Severity:	Medium
Objectives affected:	R1, R3, R4, R7, R8, R9, R13, R14



**Severance effect of the corridor / local community accessibility**

*Rural public transport access*

- 4.64 A broad assessment has been made of the accessibility of the study area. Using Accession, the DfT approved software for mapping accessibility, two contour diagrams have been prepared. Figure 4-3 illustrates car journey time contours from the urban centres along the A14 corridor. These are calculated using DfT estimates of average road speeds for different road types and show the time to the nearest urban centre (Felixstowe, Ipswich, Stowmarket, Bury St Edmunds or Newmarket). The contours show drive times at ten minute intervals up to 60 minutes.
- 4.65 Figure 4-4 illustrates a similar analysis of public transport journey times, although the network used for this analysis excludes community transport schemes and demand responsive services. The areas coloured white in the Figure are more than 60 minutes from the nearest urban area. It can be seen that substantial rural areas of Suffolk are very poorly served by public transport to the centres along the corridor.
- 4.66 Table 4-4 shows the proportion of the population within each of the car and public transport travel time contours, and demonstrates that 50% of the core area population lives within 10 minutes drive of one of the centres along the corridor. Approximately 75% live within 20 minutes drive of one of these centres. On the other hand, only 27% of the population live within 20 minutes by public transport of one of the centres, and over 50% live more than 50 minutes away.

**Table 4-4: Population within Different Travel Times of Main Centres on A14 Corridor**

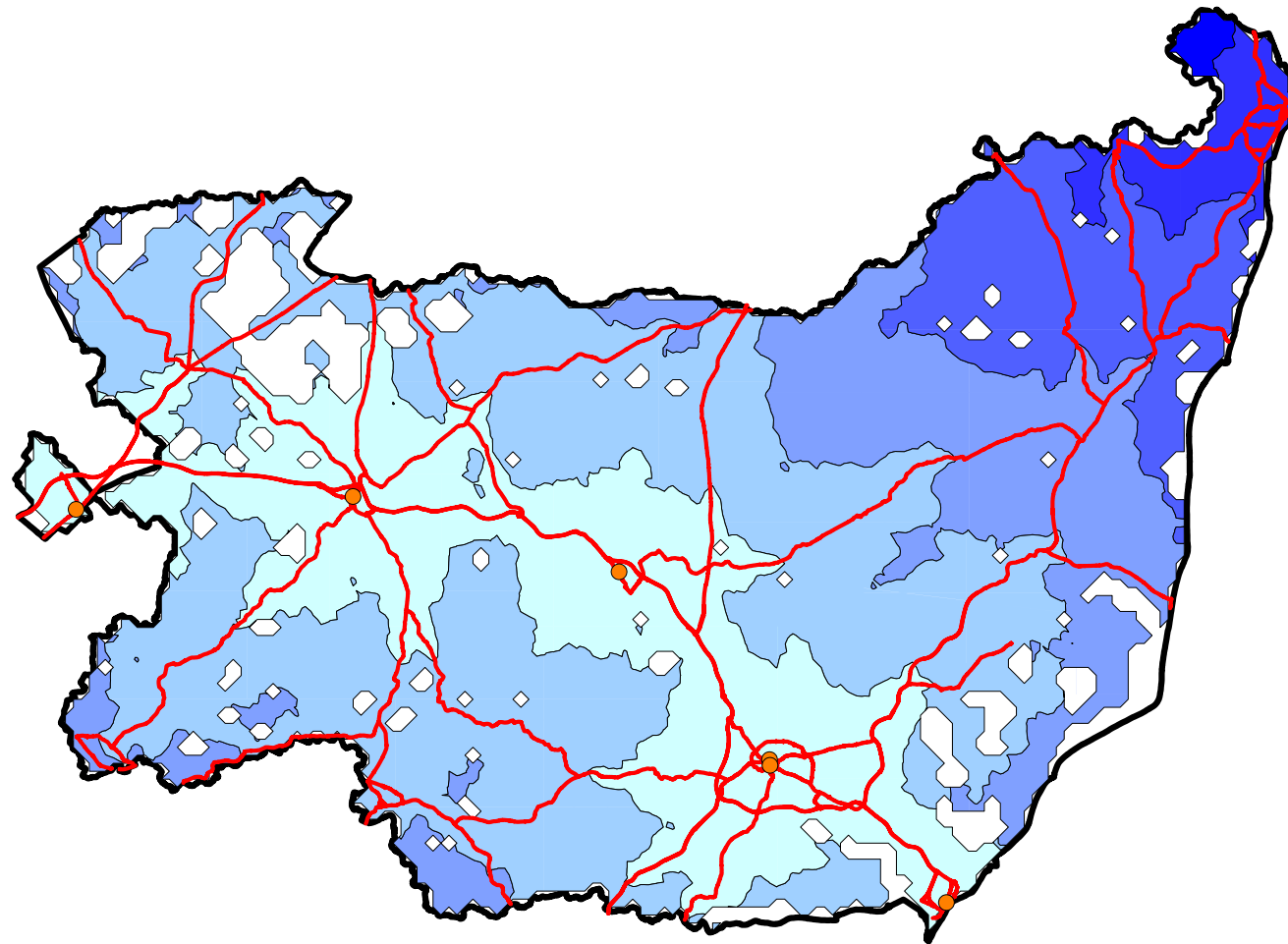
	<b>Car</b>	<b>Public Transport</b>
Less than 10 mins	52%	5%
10-20 mins	24%	22%
20-30 mins	8%	11%
30-40 mins	4%	6%
40-50 mins	12%	4%
50-60 mins	0%	26%
More than 60 mins	0%	26%
Total	100%	100%

- 4.67 One of the causes and impacts of relative poor public transport accessibility is high levels of car ownership in the rural areas of Suffolk. This is demonstrated in Figure 2-6, which illustrates the proportion of households owning at least one car. Lower car ownership rates are observed in the key centres, reflecting a combination of income levels and access to public transport and services.

<b>Problem: Rural public transport accessibility</b>	
Scale:	High
Severity:	High
Objectives affected:	R1, R2, R3, R6, R7, R9, R10, R11, R13, R14

*Stowmarket level crossing*

- 4.68 The level crossing in Stowmarket causes congestion and queues, and barriers can be down for as much as 30 minutes in an hour. Queues interfere with traffic on the A1308



Drawn By JT	Checked By JW	Date APR 05
Authorised for Issue JW		Date APR 05

NOTES

- Destinations
- A Roads
- County Boundary

Time to Destination (mins)

- 10 to 20
- 20 to 30
- 30 to 40
- 40 to 50
- 50 to 60
- 60 to 60

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**itp**  
Integrated transport planning

Tel: 01908 259718  
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Client

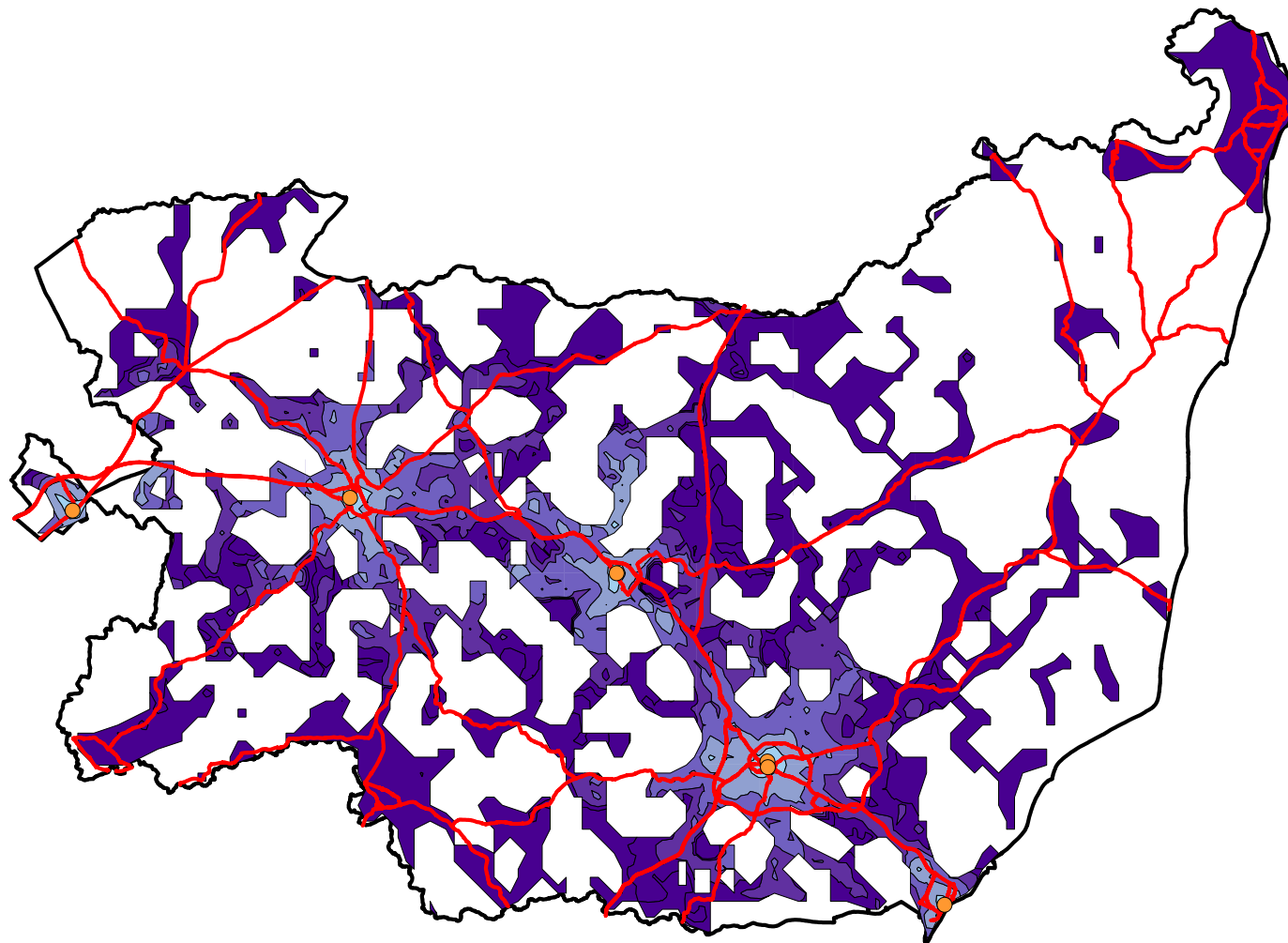
**EEDA** **east of england**  
East of England Development Agency Regional Assembly

Project  
**Newmarket - Felixstowe Corridor Study**

Drawing Title  
**Car Journey Time Contours to Centres Along A14 Corridor**

Scale NA	Date April 2005
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Drawing Number <b>Figure 4-3</b>	Rev -
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Authorised for Issue JW		Date APR 05

NOTES

- Destinations
- A Roads

Time to Destination (mins)

- 50 to 60
- 40 to 50
- 30 to 40
- 20 to 30
- 10 to 20

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Client

**EEDA** East of England Development Agency

**east of england** Regional Assembly

Project

**Newmarket - Felixstowe Corridor Study**

Drawing Title

**Public Transport Journey Time Contours to Centres Along A14 Corridor**

Scale NA	Date April 2005
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Drawing Number <b>Figure 4-4</b>	Rev -
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inner relief road. The B1115 Stowmarket Relief Road major scheme, which is part of the Suffolk LTP process, is expected to solve this problem.

*Severance of Public Rights of Way*

- 4.69 The A14 and the railway interrupt public rights-of-way at many points along the corridor. It is estimated that the A14 causes severance to approximately 50 such routes, requiring pedestrians and cyclists to cross the dual carriageway road at-grade to continue their journey. Facilities at present include stiles, gates, paths, steps and embankments leading to the carriageway, with some crossings having gaps where the safety fences cross over to allow people to walk through. Crossing of the road is clearly hazardous and discourages pedestrians and cyclists. Access issues also relate to the control and operation of level crossings, particularly to isolated properties and farms.

<b>Problem: Severance of public rights-of-way</b>	
Scale:	Low
Severity:	High
Objectives affected:	R4, R6, R11

*Slow Moving Vehicles on the A14*

- 4.70 The A14 is unsuitable for non-motorised users due to high traffic volumes and speeds. Whilst there are some parallel routes available, there are not realistic alternatives on the sections west and east of Bury St. Edmunds. The use of the A14 by cyclists was raised as a potential safety issue during the consultations. Analysis of accident data over the period 2000 to 2004 indicates that a total of 7 accidents involving cycles actually on the A14 between Newmarket and Felixstowe over the five year period. Of these, one involved a fatal casualty and the other six involved slight injuries. A further nine accidents occurred on slip roads on/off the A14, with one fatal, two with serious injuries and six with slight injuries.
- 4.71 The A14 is also used, particularly in the Bury St Edmunds area, by slow moving farm vehicles primarily accessing the sugar beet factory in the town. The impact of these vehicles on congestion and safety was raised as an issue in the consultation process.

<b>Problem: Slow-moving vehicles on the A14</b>	
Scale:	Low
Severity:	Low
Objectives affected:	R1, R8