

St Edmundsbury LDF
Haverhill Transport Impacts

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Table of Contents

Introduction.....	3
St Edmundsbury Borough Council LDF Process	4
Objectives of Study	5
Contents	6
National Transport Policy	8
Regional Spatial Strategy and Transport Policy.....	9
Suffolk County Council Policy.....	12
St Edmundsbury Borough Council Policy	14
Study Assumptions	17
Broad Location Assumption.....	19
Existing Accessibility.....	21
Potential Accessibility.....	23
Traffic Impacts Approach	25
Trip Generation.....	26
Trip Distribution.....	27
Review of Traffic Impacts	29
Potential Improvements	31
Conclusions	36
Appendix A – Accessibility to Facilities	38
Trip Generation Methodology.....	43
Trip Distribution.....	46
Tables	
Table 1 – Potential Housing Allocations Identified in the Core Strategy	14
Table 2 – Potential Housing Allocations for Haverhill.....	15
Table 3 – Dwelling Allocations for Haverhill (2010 to 2031).....	19
Table 4 – Existing Walking and Cycling Accessibility.....	20
Table 5 – Existing Haverhill Bus Accessibility.....	21
Table 6 – Existing Rail Accessibility	21
Table 7 – Potential Accessibility	23
Table 8 – Representative Wards for each Area	25
Table 9 – Precautionary Vehicle Trip Rates for Haverhill Northeast (vehicles per hour per dwelling)	26
Table 10 – Precautionary Vehicle Trip Generation for Haverhill Northeast (car trips per hour).....	26
Table 11 - Travel to Work Mode Share per Area.....	27
Table 12 – Trip Distributions for Haverhill North East based on 2001 Journey to Work Census Data	27
Table 13 – Haverhill North East (2,500 dwellings).....	34

1. Introduction

Introduction

- 1.1 This Report has been prepared by AECOM, the transport planning consultancy partner providing support to Suffolk County Council (SCC). The work described here has been commissioned jointly by St Edmundsbury Borough Council (SEBC) and SCC.
- 1.2 The work concerns a review of the transport impacts implications of developing the site to the northeast of Haverhill. The review concentrates on two main aspects of the impacts: the way in which the development can achieve a high level of sustainable transport connections within the overall land use pattern; and the likely scale and location of specific car traffic impacts on the connections to the strategic road network.
- 1.3 An Inception Report was prepared which outlined the work to be undertaken. A final version of this was issued on 16 December 2009.
- 1.4 The Inception Report envisaged a six week programme – broadly end November through to the start of January taking into account the Christmas period. This Draft Report has been issued in early January 2010.
- 1.5 The work undertaken for this review has been entirely based on existing sources and no new data collection has been undertaken. The transport analyses and judgements are intended to inform the LDF evidence base for SEBC and SCC. Where relevant, consideration has been given to the likely concerns of the Highways Agency. As the LDF develops, more detailed and quantitative analyses will be required. The work described here will in due course be complemented by specific Transport Assessments prepared by individual potential site developers.

St Edmundsbury Borough Council LDF Process

1.6 The SEBC LDF process has been through the following stages:

- Issues and Options consultation – March/April 2008;
- Preferred Options and Strategic Sites Issues and Options consultation – December/January 2009;
- Core Strategy Submission Document consultation – August to October 2009; and
- Submission to the Secretary of State – January 2010.

Suffolk County Council was consulted at each stage, and no fundamental objections to the broad strategy were raised.

1.7 As the LDF Options were developed in more detail, it became appropriate to develop the evidence base in parallel – this Study and Report provides one independent strand of that evidence base. This study of Haverhill follows earlier work undertaken by AECOM which looked at broad directions of growth within the town of Bury St Edmunds.

Objectives of Study

- 1.8 The objectives of this study are as follows:
- To provide a robust evidence base related to transport and access issues to inform the LDF process;
 - To draw conclusions on the spatial strategy for Haverhill;
 - To examine the broad location and allocation put forward in the Core Strategy Spatial Options housing provisions Policy CS12, and assess their possible transport facilities and infrastructure requirements, including wider traffic impacts on the A1307 towards Cambridge; and
 - To consider the methods for delivering the transport requirements.

Contents

- 1.9 Following this Introduction, this Report is structured in five further chapters:
- Chapter 2 - Policy Context;
 - Chapter 3 - Accessibility and Sustainability Review;
 - Chapter 4 - Traffic Impact Assessment;
 - Chapter 5 - Transport Infrastructure Review; and
 - Chapter 6 - Conclusions.
- 1.10 The main text is supported by two Appendices:
- Appendix A - Facilities and sites – active mode and bus accessibility; and
 - Appendix B - Traffic pattern analysis.

2. Policy Context

National Transport Policy

- 2.1 The Local Development Framework process has been moving forward as a two stage process: Core Strategy, followed by Site Specific Allocations and Designations. In the case of Haverhill, the site specific allocations will be made in the emerging Area Action Plan. As part of this process, analytical work is needed to demonstrate the efficiency, feasibility, deliverability and consistency of the proposals. In particular, the proposals need to fit into the wider national, regional, and county policy contexts.
- 2.2 Nationally there are three evolving trends, building an established policy and appraisal framework:
- Within the established appraisal framework, policy and funding constraints are resulting in transport system interventions being smaller scale, and directed towards supporting sustainable modes, and encouraging behavioural change – existing funding channels are being reduced;
 - The delivery mechanisms are increasingly seen as involving the private sector, seeking to maximise the contribution from developers, but in a recently depressed and difficult market; and
 - A new programme of 'Delivering a Sustainable Transport System' is being initiated, seeking to research the best methods for delivering change from the current car dominated system.
- 2.3 Thus in the context of high regional targets for new housing delivery, the funding mechanisms are changing, and the funds flowing through them are reducing.
- 2.4 At present, the guidance on the background trends in transport require careful review - the previous steady growth targets are clearly not happening, and local judgements need to be made as to the regional traffic trends. Equally, we need to consider the probability of some form of growth returning in the medium term. Clear and ambitious targets are needed, against a backdrop of current policies and funding expectations.

Regional Spatial Strategy and Transport Policy

East of England Plan (2008)

2.5 The East of England Plan, the Regional Spatial Strategy, was published in May 2008.

2.6 Overall the Plan takes account of the Regional Economic Strategy and the Regional Sustainable Development Framework to provide a regional vision to achieve sustainable development in the East of England.

2.7 The Plan covers the counties of Norfolk, Suffolk, Cambridgeshire, Essex, Hertfordshire and Bedfordshire.

2.8 The objectives of the overall spatial vision of the Plan which are considered relevant to this assessment are:

"To reduce the region's impact on, and exposure to, the effects of climate change by:

- *Locating development so as to reduce the need to travel; and*
- *Effecting a major shift in travel away from car use towards public transport, walking and cycling.*

To address housing shortages in the region by:

- *Securing a step change in the delivery of additional housing throughout the region, particularly the key centres for development and change.*

To realise the economic potential of the region and its people by:

- *Providing for job growth broadly matching increases in housing provision and improving the alignment between the locations of workplaces and homes; and*
- *Ensuring adequate and sustainable transport infrastructure.*

To improve the quality of life for the people of the region by:

- *Ensuring new development fulfils the principles of sustainable communities, providing a well designed living environment adequately supported by social and green infrastructure; and*

- *Promoting social cohesion by improving access to work, services and other facilities, especially for those who are disadvantaged."*

2.9 The spatial strategy of the East of England Plan encompasses nine policies. Those which are relevant will be examined further here.

Policy SS1: Achieving Sustainable Development

2.10 This states that the strategy aims to ensure that development:

"Maximises the potential for people to form more sustainable relationships between their homes, workplaces, and other concentrations of regularly used services and facilities, and their means of travel between them."

Policy SS2: Overall Spatial Strategy

2.11 Policy SS2: Overall Spatial Strategy builds upon Policy SS1 and states that growth should be directed at the major urban areas of the region, namely where:

"Strategic networks connect and public transport accessibility is at its best and has the most scope for improvement; and

There is the greatest potential to build on existing concentrations of activities and physical and social infrastructure and to use growth as a means of extending and enhancing them efficiently."

2.12 New policies to be developed should:

"Ensure new development contributes towards the creation of more sustainable communities in accordance with the definition above and, in particular, require that new development contributes to improving quality of life, community cohesion and social inclusion, including by making suitable and timely provision for the needs of the health and social services sectors and primary, secondary, further and higher education particularly in areas of new development and priority for regeneration; and

Adopt an approach to the location of major development which prioritises the re-use of previously developed land in and around urban areas to the fullest extent possible while ensuring an adequate supply of land for development consistent with the achievement of a sustainable pattern of growth and the delivery of housing in accordance with Policy H1."

- 2.13 It is therefore important to ensure that sustainable transport options are provided so as to encourage residents to travel by modes other than the private car.

Policy SS4: Towns other than Key Centres and Rural Areas

- 2.14 None of the areas being considered in this Study have been selected as Key Centres for Development and Change, and so they all fall under Policy SS4.

- 2.15 This Policy aims to increase the economic and social sustainability of such towns through measures to:

- *“Support urban and rural renaissance;*
- *Secure appropriate amounts of new housing, including affordable housing, local employment and other facilities; and*
- *Improve the town’s accessibility, especially by public transport.”*

- 2.16 Policy CSR1 identifies Haverhill as one of the ring of market towns in the Cambridge sub-region with a role in supporting development in Cambridge.

- 2.17 Section 5 of the East of England Plan is dedicated to housing and should be read in conjunction with PPS3. AECOM has not reviewed PPS3 in relation to this study.

Regional Transport Strategy (RTS)

- 2.18 The RTS forms Policy T1 of the East of England Plan. Its visions which are relevant to this study are:

- *“To manage travel behaviour and the demand for transport to reduce the rate of road traffic growth and ensure the transport sector makes an appropriate contribution to reducing greenhouse gas emissions;*
- *To encourage efficient use of existing transport infrastructure;*
- *To enable the provision of the infrastructure and transport services necessary to support existing communities and development proposed in the spatial strategy;*
- *To improve access to jobs, services and leisure facilities.”*

- 2.19 The East of England Plan then states that if these objectives are achieved then the following should result:

- *“Improved journey reliability as a result of tackling congestion;*
- *Increased proportion of the region’s movements by public transport, walking and cycling;*
- *Sustainable access to areas of new development and regeneration.”*

Policy T2: Changing Travel Behaviour

- 2.20 This policy is particularly relevant to influencing travel behaviour and the policies suggested could be applied to the potential development in Haverhill to try and promote and ensure sustainable travel.

- 2.21 The policy aims:

“To bring about a significant change in travel behaviour, a reduction in distances travelled and a shift towards greater use of sustainable modes.”

- 2.22 This could be achieved through the following policies:

- *“Raise awareness of the real costs of unsustainable travel and the benefits and availability of sustainable alternatives;*
- *Encourage the wider implementation of workplace, school and personal travel plans;*
- *Introduce educational programmes for sustainable travel;*
- *Investigate ways of providing incentives for more sustainable transport use; and*
- *Raise awareness of the health benefits of travel by non-motorised modes.”*

Policy T4: Urban Transport

- 2.23 This policy is aimed at urban areas including market towns. A range of measures which fit local circumstances should be implemented. For Haverhill these could include:

- *“Ensuring urban extensions and other major developments are linked from the outset into the existing urban structure through safe, well designed pedestrian and cycling routes and a high standard of public transport;*
- *Capitalising on opportunities provided by new development to achieve area wide improvements in public transport services, footpaths and cycle networks;*
- *Promoting public transport through quality partnerships or other agreements to deliver enhanced services, improved interchange, increased access, higher levels*

of public visibility, better travel information, and appropriate traffic management measures; and

- *Improvements to local networks for walking and cycling, including increasing the attractiveness and safety of the public realm.”*

Policy T6: Strategic and Regional Road Networks

2.24 Development in Haverhill is likely to have an impact on some sections of the A11 Trunk Road, particularly at the junction of the A11 and A1307. Policy T6 focuses on maintaining such strategic and regional road networks to ensure the following:

- *“Improved journey time reliability as a result of tackling congestion;*
- *Improved access to key centres for development and change, strategic employment location and priority areas for regeneration;*
- *Improved safety and efficiency of the network;*
- *Mitigation of environmental impacts; and*
- *Maintenance of the benefits from managing traffic demand.”*

Policy T8: Local Roads

2.25 Any development is likely to have an impact on nearby local roads.

2.26 This policy is therefore aimed at Local Authorities to:

- *“Tackle congestion and its environmental impacts;*
- *Facilitate the provision of safe and efficient public transport, walking and cycling;*
- *Provide efficient vehicular access to location and activities requiring it, particularly in areas of growth and where regeneration is dependent on improved access; and*
- *Improve safety.”*

Policy T9: Walking, Cycling and other Non-Motorised Transport

2.27 This policy is particularly relevant to increasing and improving sustainable access to the potential broad directions of growth. This would be largely through better walking and cycling provision further afield as well as within local towns and villages.

Policy T13: Public Transport Accessibility

2.28 Policy T13 states that:

“Public transport provision, including demand responsive services, should be improved as part of a package of measures to improve accessibility. Public

transport use should be encouraged through the region by increasing accessibility to appropriate levels of service of as high a proportion of households as possible, enabling them to access core services (education, employment, health and retail).”

2.29 This policy is very relevant to the promotion of sustainable access to key services and the need to improve and build upon existing bus and rail services to provide residents with the option to not travel by car.

Suffolk County Council Policy

Suffolk County Council Local Transport Plan (2006 – 2011)

- 2.30 Suffolk County Council's Local Transport Plan (LTP) covers the period from 2006 to 2011 and focuses on how the County proposes to implement their transport strategy as well as outlining any longer term transport objectives for the County. The following plan – LTP3 – is starting to be outlined. During 2010, the LTP3 will be developed and the transition will begin. It is expected that LTP3 will be more closely integrated with the overall SCC policies for health, environment and the economy, and will be drawn up in the expectation of reducing resources being channelled through the LTP process.
- 2.31 The objectives identified in the LTP which can be considered relevant to St Edmundsbury include:
- Improve public transport, walking and cycling;
 - Develop sustainable modes of travel between west Suffolk and employment opportunities in Cambridge;
 - Minimise the impact of traffic and transport infrastructure (including air quality impacts) in market towns, villages and tourism hotspots to protect the county's environment and built heritage; and
 - Maintain and improve Suffolk's transport network to support businesses and communities.
- 2.32 The vision for transport in Suffolk for the next 15 to 20 years is:
- "to deliver sustainable travel patterns that support Suffolk's ambitions to meet social and economic growth, enable regeneration and to fulfil its gateway role, whilst protecting its unique environment and quality of life."*
- 2.33 Overall trends and statistics for the county reveal that:
- There will be an overall 45% increase in car trips and 28% increase in heavy goods vehicle trips along the A14 corridor in the next 15 years;
 - Over 85% of Suffolk's working population are employed in the county;
 - The major commuting movements within the county are to and from Ipswich, Bury St Edmunds and the United States' military bases in Forest Heath;
 - Car ownership is high due to the rural nature of the county (rising by 7% between 2001 and 2003);
 - Motorcycles represent a high percentage of all licensed vehicles (5.2%);
 - Cycling and walking as modes of transport have declined over the past 10 years;
 - The car is used for short trips despite high levels of cycle ownership (70% of households) in the county; and
 - There is a high density of rights of way network in Suffolk with 73% of the population using the network weekly.
- 2.34 It is also identified that from Haverhill there are major commuting movements towards Cambridge. As a result it is proposed to work with Cambridgeshire County Council to develop improved transport services between Haverhill and Cambridge.
- 2.35 The accessibility section of the LTP highlights that accessibility within towns and urban areas is often considered adequate. However, in order for SCC to meet their aims of reducing congestion and improving air quality, more emphasis will need to be placed on walking and cycling. It is highlighted that this is particularly important in the main towns of the county where shorter distances mean that travelling by walking and cycling is more viable.
- 2.36 The overall aim of SCC's accessibility strategy is:
- "to provide better opportunities to access employment, education, health, shopping and leisure, particularly for those people at risk from social exclusion due to location, income or other forms of disadvantage."*
- 2.37 It is therefore vital that any new developments are located in areas where this access is possible or where methods are in place to ensure that there is an adequate level of accessibility to those residents without access to a car.
- 2.38 The LTP has identified that peak period congestion occurs on through traffic routes in market towns and villages, and that there is seasonal congestion in some rural areas and tourist honey pots. In order to reduce congestion as a whole, the LTP proposes investment in public transport infrastructure and sustainable travel. This includes:

- **Bus priority** – buses play an important role in helping to reduce congestion. Reliability and punctuality are considered as key factors which will influence people's travel mode. SCC aims to continue to introduce bus priority measures, including bus lanes. This is further detailed in Suffolk's Bus Strategy.
- **Improved provision and quality of bus services** – the LTP aims to improve the provision of bus services through quality bus partnerships. This includes increased service reliability, better quality and availability of information via real time information displays, improved interchange facilities and improved waiting environments. SCC also aims to investigate the trial of a number of Kickstart schemes.
- **Improved provision and quality of facilities for pedestrians and cyclists** – the County Council aims to implement detailed programmes of improvements to walking and cycling routes to encourage people to make short trips on foot or by bicycle. The overall aim is to provide good quality pedestrian facilities and improved cycle links to, within, and across town centres, linking transport facilities to key employment, education and shopping areas.
- **Improved Public Rights of Way** – improvements to Public Rights of Way would allow these routes to be integrated with existing and new walking and cycling networks. Better maintenance is highlighted as a necessity.

2.39 The County also proposes a range of measures to target demand management. These include:

- **Availability and cost of car parking** – these would include proposals to encourage a shift in commuting patterns through the promotion of green travel plans and secure cycle parking in existing and new developments.
- **Workplace travel planning** – these would aim to bring about a shift in employees' mode of travel to work from the private car to a more sustainable mode.
- **Reducing the need to travel** – SCC aims to reduce the need to travel as much as possible but also accepts that travel is a necessity and therefore will ensure that developments in Suffolk are well served by public transport, pedestrian and cycle facilities. They will ensure that resources are targeted towards schemes that promote long term sustainable travel and that appropriate developer contributions are received.

2.40 The LTP states that SCC will look at options for tackling congestion problems in market towns and villages throughout Suffolk, including in some cases the possibility of bypass options.

St Edmundsbury Borough Council Policy

St Edmundsbury Local Development Framework – Core Strategy Proposed Submission Document (August 2009)

- 2.41 The LDF Core Strategy proposed Submission document details the overall strategic vision for St Edmundsbury. The first round of consultation on the Issues and Options report took place in March and April 2008. A second public consultation on the Core Strategy Preferred Options and Strategic Sites and Issues and Options ended in January 2009. The latest public consultation concerned the Core Strategy Submission Document between August and October 2009. It is proposed to submit the Core Strategy to the Secretary of State in January 2010.
- 2.42 The Core Strategy will provide the long term vision for the District up to 2021 and will consider residential growth up to 2031. It is designed to meet the needs of the Regional Spatial Strategy for the East of England.
- 2.43 The debate on the strategic residential dwelling locations has already reached the conclusions set out in the Core Strategy: 1,100 new dwellings are proposed to the northwest of Haverhill based on the adopted Replacement Local Plan 2006 and reinforced by the adoption of the North-West Haverhill masterplan in 2009; and 2,500 further houses to the north-east identified in the Core Strategy CS12, and to be developed in phases after 2021.
- 2.44 Policy CS1 of the Core Strategy Submission Document sets out the spatial strategy for St Edmundsbury as a whole. It states that Bury St Edmunds and Haverhill will be the main focus for the location of new development.
- 2.45 Provision has been made in the Core Strategy for at least 9,000 new homes in St Edmundsbury between 2008 and 2031. This would meet the requirements of the East of England Plan for the region.
- 2.46 Table 1, based on information provided in the Core Strategy outlines the overall housing provision for St Edmundsbury. This includes Bury St Edmunds and Haverhill as well as Key Service Centres and Local Service Centres.

Table 1 – Potential Housing Allocations Identified in the Core Strategy

	St Edmundsbury Borough
Already built 2001 – 2008	3,037
Currently permitted (April 2008)	1,362
Remaining Local Plan allocations rolled forward	1,989
Strategic directions of growth	6,850
Other potential*	1,780
Total	15,593

- 2.47 Policy CS12 focuses on strategic growth within Haverhill and states that an Area Action Plan DPD (Development Plan Document) will be provided for the town.
- 2.48 Additionally, land to the northwest of Haverhill was allocated as part of Policies HAV2 and HAV8 in the Replacement St Edmundsbury Borough Local Plan 2016. This proposed to deliver 1,100 new homes, associated services and the northwest relief road. The masterplan for the development was approved by the Council in June 2009.
- 2.49 The northeast site will need to achieve the following relevant aims:
- Maintain the identity and segregation of Kedington and Little Wratting;
 - Provide new high quality strategic public open space and recreation facilities;
 - Deliver a north-east relief road for Haverhill between the A134 and the A1017 and the local distributor road network;
 - Provide improved public transport, foot and cycle links to the town centre and other locally significant leisure, employment and service destinations;
 - Deliver additional education, community and leisure facilities to meet the needs of this development and the deficits of the wider area;
 - Deliver around 2,500 homes of mixed tenure and size, including affordable homes; and
 - Provide opportunities for B1 use class local employment.

2.50 Table 2 outlines the breakdown of housing for Haverhill

Table 2 – Potential Housing Allocations for Haverhill

	Haverhill	Total St Edmundsbury Borough
Already built 2001 – 2008	930	3,037
Currently permitted (April 2008)	373	1,362
Remaining Local Plan allocations rolled forward	1,273	1,989
Strategic directions of growth	2,500	6,850
Other potential*	240	1,780
Total	5,316	15,593
Percentage	34%	-

2.51 Development in north eastern Haverhill is unlikely to progress before 2021, with the actual amount of development being determined by environmental and infrastructure capacity constraints.

Transport Assessment for Residential Development and North-West Haverhill Relief Road: Development Area HAV2 Haverhill (April 2009)

Bidwell Property Consultants Ltd and MLM Consulting Engineers Ltd

- 2.52 The Transport Assessment considers an urban extension to the northwest of Haverhill which includes the provision of a new northern relief road along with a new residential development of some 1,150 dwellings. The Transport Assessment considers the main junctions in and around Haverhill, taking into account the north-west development of up to 1,150 dwellings, with some 750 phased before 2016.
- 2.53 Traffic surveys and ARCADY and Linsig junction analyses are presented taking into account the recently completed Tesco development. In summary, the Transport Assessment suggests that the Haverhill town centre Cangle junction will be well over capacity in the future in the 'Do Minimum' situation. With the addition of the development traffic, and the diversion of 50% of the existing through traffic to the new northern relief road, the town centre junctions, particularly the Cangle, are considered to be under pressure, but manageable. The traffic analysis assumptions are compared with our own work in Chapter 4.

Study Assumptions

- 2.54 Within the SEBC LDF process, Policy CS12 of the Core Strategy Submission Document identified Haverhill as an area for strategic growth. In order to deliver the development strategy of the LDF, a large greenfield site in Haverhill will need to be released. This is proposed to be a site to the northeast of Haverhill and will form the basis for this Study.
- 2.55 AECOM have had to make a series of informal assumptions in order to progress this Study:
- The specific connection points from the proposed location to the existing local road networks;
 - The probable scale of transport infrastructure and facilities investment likely to be undertaken in any case by the developer and local authorities;
 - The reasonable upper and lower bound range of traffic generation levels, taking into account nearby existing 'business as usual' travel patterns, and the likely behavioural changes to more sustainable, lower car use, patterns in the near future; and
 - The range of background travel growth in the region, and its likely impact on critical elements in the transport networks.
- 2.56 Using these starting assumptions, the implications of the proposed housing development option is worked through, to result in a suggested list of costed transport interventions required for the broad location.
- 2.57 Subsequent iterations of the process can consider these initial suggestions together with other sectorial environmental and community facilities studies, together with the evolving commercial pressures for development at particular sites.
- 2.58 At this stage, the Study has focussed solely on the broad location in Haverhill identified in the Core Strategy. Development within Bury St Edmunds has been the subject of a previous study and it is likely that development will also occur in the Key Service Centres and other villages. These lesser dispersed developments are unlikely to have a major impact on the road network, and in themselves do not have the critical mass to support the provision of any significant sustainable transport measures.

3. Accessibility and Sustainability Review

Broad Location Assumption

- 3.1 The potential housing allocations and the areas under consideration are all detailed in the Core Strategy Submission Document for SEBC. This is discussed further in Section 2 of this report.
- 3.2 This Study will solely consider development in Haverhill. The assumptions made regarding the number of dwellings to be allocated for Haverhill for the purposes of this study can be seen in Table 3.

**Table 3 – Dwelling Allocations for Haverhill
(2010 to 2031)**

	No. of Dwellings
Haverhill	2,500

- 3.3 These 2,500 dwellings proposed for Haverhill are identified in the Core Strategy Submission Document for St Edmundsbury as representing strategic growth. Other growth is also proposed for Haverhill with 1,273 dwellings from the Local Plan allocations being rolled forward. This Study though will assume that the broad location under question is in northeast Haverhill and will encompass 2,500 dwellings.

Key Services

- 3.4 The key services that have been referred to in this assessment are:
- Schools;
 - Doctors' surgeries;
 - Hospitals;
 - Supermarkets;
 - Post Offices.
- 3.5 Plans showing these key services for Haverhill can be found in Appendix A.
- 3.6 It should be noted that secondary education is under review in Suffolk, and in some districts it is proposed that the existing three tier system be reduced to a two tier school system (primary and secondary). The decision on this proposed reorganisation is awaited. In this study, it is assumed that primary schools would be provided locally as required, if necessary as part of the development.

Key Employment Sites

- 3.7 The employment sites that have been taken into consideration in this study are:
- Haverhill Town Centre;
 - Hanchet End Business Park;
 - Vion Food Group (Little Wrattling);
 - Haverhill Business Park;
 - Haverhill Industrial Estate;
 - Genzyme;
 - IFF; and
 - Boundary Road Industrial Estate.
- 3.8 Key services and key employment sites are the two main categories of travel destinations considered in the review of walk/cycle and public transport accessibility.

3.9 AECOM has assessed the existing level of accessibility and sustainability of the broad Haverhill development location by public transport, walking and cycling, as well as taking into account the existing road network.

- Poor = no existing facilities in place, or such a low level that substantial improvements would need to be made.

3.10 Each mode of transport has been assessed in terms of existing provision to the broad location. An overall assessment has then been undertaken. It should be noted that this is a qualitative assessment and is based on research using bus and rail timetables, aerial photography and cycle maps for the area. No on site research has been undertaken. Appendix A contains a plan for the Haverhill northeast broad location, which shows the positions of key services, 1km and 3km radius buffers from the edge of the broad location, as well as current bus routes which serve the area.

3.11 1km and 3km radius buffers have been used as these have been taken by AECOM to enclose the likely areas accessible from the developments under the PPG 13 Transport acceptable criteria of 2km for a walk trip, and 5km for a cycle trip (on average from anywhere in the development, along convenient routes).

3.12 A view as to the potential for improving the accessibility to the broad location by sustainable modes has also been included. This is qualitative and does not take into account costs or any other restrictions which may be present.

Walking and Cycling

3.13 AECOM has used the Sustrans website and information provided by the cycling officer at SCC to assess existing cycling provision in the area.

3.14 Aerial photography has been used to assess the potential for walking links and to view current footpaths in the area. It should be noted that this is not an exhaustive method and therefore more detailed analysis would need to be undertaken to properly assess the walking links in the area.

3.15 AECOM has rated walking and cycling on the following scale:

- Good = existing facilities in place;
- Reasonable = some signs of existing facilities but improvements would be needed to promote these modes further; and

Table 4 – Existing Walking and Cycling Accessibility

	Haverhill northeast
Walking Facilities	Reasonable
Cycling Facilities	Reasonable
Overall	Reasonable
Comments	A reasonable level of walking and cycling links exist throughout the town, but poor levels of connectivity between links.

3.16 There are a number of existing walking connections from the broad direction to Haverhill town centre and the industrial estates to the southeast of the town.

3.17 The Chalkstone Way / Millfields Way residential area appears from aerial photos to provide footway connections to the A143 Wratting Road, the town centre, and local schools in the vicinity.

3.18 The plan provided by SCC shows that there is a number of existing off road cycle tracks within Haverhill. The main off road cycle track is in a northwest / southeast direction and runs parallel to the A1307 Withersfield Road and the A1017 along what appears to be the now disused railway line.

3.19 From this off road cycle track, there are several off road and on road links to different parts of Haverhill, including the town centre and residential areas.

3.20 However, the level of connectivity between links outside of this main off road artery is poor. There are on road links within the industrial estate to the southeast of the town centre, and within the residential areas to the south of the town.

3.21 With the exception of the main off road artery, there are sections of off road cycle tracks within Haverhill. These are however largely to the western edge of the town.

Existing Accessibility

3.22 The majority of cycle facilities consist of short sections of on road or off road track which do not at present appear to connect to other related facilities.

3.23 With regards to the potential new broad location, there are some on road cycle tracks within the Chalkstone Way / Millfields Way residential area which connect to the off road artery cycle track and via this to the town centre.

Public Transport

3.24 The level of bus (and rail where applicable) access to the area has been reviewed. This information has been obtained from bus route timetables (Suffolk County Council website) and rail timetables (National Rail website). Appendix A lists the findings.

Bus

3.25 With regards to bus accessibility, AECOM has reviewed the existing level of bus service in terms of the number of routes that currently serve Haverhill as a whole and the frequency of these services (see Table 5). This information has been obtained from bus timetables for Haverhill & Surrounding Area.

Table 5 – Existing Haverhill Bus Accessibility

Measure	Overall existing bus accessibility
Total bus routes	18
Hourly or better services	7
Half hourly	3
Assessment of existing services	Good

3.26 Haverhill is served by a number of bus routes although the majority of these operate only a few buses a day. However, the most frequent routes which provide direct connections to Cambridge, Linton, and Bury St Edmunds pass along the A143 Wrattling Road and close to the broad location.

3.27 Routes 13/13A/X13 operate on a half hourly basis (Monday to Saturday) and hourly on a Sunday and travel along the A143 Wrattling Road before turning off into the residential area off Chalkstone Way/Millfields Way. However, the routes vary slightly between the services.

3.28 Routes 344/345/346/347 operate approximately hourly linking Haverhill to Bury St Edmunds. These services also use the A143 Wrattling Road.

3.29 Overall, the area is well served by inter urban bus services with the bus station being located within about 1km of the western part of the area. This increases the number of services available.

3.30 This bus accessibility assessment has been included in the overall access to facilities considered in Appendix A.

Rail

3.31 Haverhill does not have a rail station. The closest rail stations to Haverhill are at:

- Dullingham;
- Newmarket; and
- Audley End.

3.32 Information regarding each of these rail stations can be seen in Table 6. Distances have been measured as the crow flies to provide a rough estimate, but in reality these are likely to be longer and only accessible by car.

Table 6 – Existing Rail Accessibility

	Distance from broad location (km)	Frequency of service	Existing rail accessibility
Dullingham	15	Every other hour (Mon to Sun)	Poor
Newmarket	18	Hourly (Mon to Sat) Every other hour (Sun)	Poor
Audley End	20	Every 20 minutes (Mon to Sun)	Poor
Whittlesford	20	Half hourly	Poor

3.33 All three rail stations are on the National Express East Anglia network. Dullingham and Newmarket are on the Ipswich to Cambridge line. For connections to London it is necessary to change at Cambridge. The rail service operates approximately hourly from Newmarket (Monday to Saturday) and every other hour on a Sunday. Dullingham is served by a train roughly every other hour (Monday to

Sunday). Journey times from Newmarket to Cambridge are just under 30 minutes and to Ipswich are about an hour.

- 3.34 Audley End is on the London Liverpool Street to Cambridge line. The rail service operates approximately every twenty minutes (Monday to Sunday). From Audley End to Cambridge, the journey time is just under 25 minutes, and to London Liverpool Street, about an hour. There is also a Parkway Station at Whittlesford, off the A11 and just north of Audley End station, serving the Cambridge to London Liverpool line.
- 3.35 The rail accessibility has been rated as Poor since all stations are expected to be accessed primarily by car.

Accessibility to Services

- 3.36 PPG13: Transport states that 2km is considered an acceptable walking distance to facilities with 5km an acceptable cycling distance. AECOM has used crowfly radii of 1km, and 3km to represent actual likely walking and cycling catchment boundaries, as shown in Appendix A.
- 3.37 The location of the potential new development would be to the northeast of the town, with all town centre facilities within about 1km.
- 3.38 Almost all the main centres of employment are within 3 kms of the location. These include Haverhill Industrial Estate, Gezyme, IFF and Haverhill Business Park – with businesses such as Culina, Percy Dalton's World Famous Peanut Company, Buildbase, and Stagecoach all being located here.
- 3.39 Haverhill Industrial Estate.
- 3.40 Vion Food Group based in Little Wratting just north of Haverhill and within about 3km of the proposed development was the town's biggest employer. However, there were significant job cuts at this food processing in January 2009.

Potential Accessibility

3.41 The accessibility of the Haverhill northeast development location can be improved. Table 7 summarises the potential for improvement using the following qualitative measures:

- Good = existing facilities in place or the potential to provide a good level of sustainable access;
- Reasonable = some signs of existing facilities but improvements would be needed to promote these modes further or a some sustainable facilities likely to be present in the future; and
- Poor = limited or no existing facilities in place and even with improvements is likely to lack effective sustainable access.

3.42 Overall, a number of improvements could be made to improve accessibility within the area. These are:

- Increase frequency of existing bus services;
- Re-route bus services or provide shuttle minibus services, to ensure that the new development is served;
- Provide a Sunday service for key services;
- Provide off road cycling facilities where possible to link the new development to the town centre and key services;
- Ensure that cycle facilities such as safe cycle storage is provided to encourage cycling; and
- Provide footpath links from the new development to key locations.

3.43 The potential accessibility of the Haverhill northeast area has been considered to establish whether it would be feasible to improve the overall level of sustainability.

Table 7 – Potential Accessibility

	Walking	Cycling	Bus	Overall
Haverhill northeast	Good	Good	Good	Good

3.44 Good walking and cycle links should be provided within the development itself, and these should be designed to connect to existing facilities where possible.

3.45 Existing walking links could be improved by ensuring that the new development is served by

walking routes to the town centre, bus stops as well as to key services and employment centres. These walking links should be well lit and connected to existing walking links within Haverhill.

3.46 Existing cycle links could be improved by converting on road tracks to off road tracks where possible. Ideally, new off road tracks should be provided from the potential development to connect with existing tracks as well as key services within Haverhill. The Haverhill northeast development location is situated north of the existing Chalkstone Way / Millfields Way residential development and it may be possible to provide links through this residential area.

3.47 Cycle links between the town centre and the industrial estates to the southeast of the town could be improved. Ideally, off road tracks would connect not only the proposed development location, but also the town centre, and other residential areas.

3.48 Within the town centre, off road cycle tracks should be established and these should be complemented with cycle parking in key locations, such as the bus station.

3.49 Ultimately a full network of off road tracks could be established to provide full connectivity within Haverhill.

3.50 As detailed earlier in this report, Haverhill has a reasonable level of inter urban bus service providing links to towns further afield. Increasing the frequency of some services and in some instances providing a Sunday service would improve this further.

3.51 Direct bus services from the proposed new development to Haverhill Business Park to the south of the town centre and to the Vion Food Group food processing plant in Little Wratting would ensure that residents would be able to both live and work within Haverhill.

4. Traffic Impact Assessment

Capabilities on project:
Transportation

Traffic Impacts Approach

4.1 The traffic impact analysis conducted as part of this study was limited to consideration of the possible traffic impact of the Haverhill northeast development. No detailed account was taken of the existing traffic generation and distribution in and through Haverhill. In summary, the process followed was as follows:

- The 2001 Census journey to work data for nearby representative wards was examined, to establish a baseline for the current rates of mode split and car traffic activity;
- Site density and characteristics assumptions were made for each of the potential locations, and the TRICS 2009 database and the National Travel Survey 2007 used to suggest overall levels of car trip generation for the residential activity; and
- Trip distribution was estimated using the 2001 journey to work information.

4.2 Judgements were then made as to how possible design, policy, and facilities interventions could impact on the degree to which more sustainable transport patterns of behaviour could be introduced.

4.3 The area was matched with its closest ward (in terms of distance and landuse) in order to obtain journey to work data that could be considered representative of the predicted travel patterns for that area. The representative ward used is shown in Table 8.

Table 8 – Representative Wards for each Area

Area	Ward
Haverhill northeast	Haverhill East

4.4 Following discussions with SEBC and SCC, the following key junctions have been identified as being potentially problematic and likely to be affected by the development:

- A1307 / A11 junction;
- A1307 / A1017 3-arm roundabout to the west of Haverhill town centre;
- A1307 Withersfield Road / Meldham Bridge roundabout; (the new junction with the Queens Road to Withersfield, and the western end of the north west relief road);
- A1307 / A143 double mini roundabout junction in town centre (locally known as the Cangle

junction) – recently remodelled as part of the new Tesco supermarket development;

- A143 Sturmer Road / Chalkstone Way 3-arm roundabout;
- A1017 / A1017 Rowley Hill 3-arm roundabout;
- A1307 / Sturmer Road to the east of Haverhill; and
- A143 / B1061 staggered crossroads, north of Kedington.

The traffic has been distributed onto the network so that the impacts at these relevant nearby junctions can be seen.

4.5 The following assumptions have been made regarding this distribution:

- The northwest Haverhill relief road will be in place and vehicles travelling westbound will use this road to access the A1307 at the Meldham Bridge junction.
- A northeast Haverhill development distributor spine road will be constructed which will link the A143 and the roads north of Haverhill Golf Course. Consequently, any vehicles travelling eastbound will access the A1017 via this new relief road and the road next to the golf course.
- Only vehicles travelling south along the B1057 and those travelling to central areas will impact upon the Cangle junction. For simplicity this double roundabout has been modelled as a single junction.
- The impact at the A11/A1307 junction has also been modelled to provide information as to the number of vehicles that are likely to impact on this junction and their movements from there.
- Vehicles entering and exiting the proposed development will either do so via the A143 or the road to the east of the golf course.

4.6 The Highways Agency was also consulted but the location of the development is such that it is not deemed to have a significant effect on their strategic highway network.

Capabilities on project:
Transportation

Trip Generation

4.7 Appendix B of this report details the methodology used to determine the trip rates for the existing general levels of sustainable travel mode use. Table 9 shows the vehicle trip rates, taking into account 2001 Census data, the National Travel Survey and the TRICS database.

Table 9 – Precautionary Vehicle Trip Rates for Haverhill Northeast (vehicles per hour per dwelling)

	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Haverhill	0.13	0.50	0.63	0.33	0.21	0.53

4.8 Applying the vehicle trip rates shown in Table 9 to the number of dwellings proposed (see Table 3) the number of vehicle trips that would be generated has been calculated, as shown in Table 10.

4.9 These car trip generation estimates have been derived from merging several sources. The 2001 Census journey to work data alone is available to analyse the mode split and trip distribution. Using Journey to Work data for all peak trips is not precisely correct, as journeys associated with education and shopping for example may have a different mode and distribution. Indeed, a proportion of trips, for example shopping and education will be internalised, and no account has been made for this. However, for the purposes of this assessment, it is considered a reasonable approximation.

4.10 These precautionary car trip rates could be reduced by up to 20 percent, depending on the implementation of a range of initiatives towards the use of walk, cycle, and bus modes. The achievement of such a reduction is also dependent on the design layouts and locations.

4.11 These trip rates have been compared with those put forward by the Transport Assessment consultants for the north west Haverhill development. For the morning peak hour, the car driver trip rates suggested by the Transport Assessment consultants are some 20 percent lower than the ones used here; for the evening peak the opposite pertains – the Transport Assessment consultant’s rates are some 20 percent higher than those used for this Study.

Table 10 – Precautionary Vehicle Trip Generation for Haverhill Northeast (car trips per hour)

	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Haverhill	324	1,241	1,566	817	514	1,331

Capabilities on project:
Transportation

Trip Distribution

4.12 The journey to work split by mode has been abstracted from the 2001 Census information for Haverhill East ward, and is presented in Table 11, using the ward / broad direction comparator suggested in Table 8. This shows the percentage of trips made by each mode, and forms a starting point for discussing the scope for encouraging the use of modes other than car. It should be noted that these figures are derived from the 2001 Census.

Table 11 - Travel to Work Mode Share per Area

	Car	Public Transport (Bus / Train)	Walking and Cycling
Haverhill northeast	69%	4.2%	17.4%

(Percentages do not sum to 100 because of respondents who work at home, or did not work at their usual place of work on the day of the Census)

4.13 The relatively high walk and cycle mode share reflects the employment opportunities available within Haverhill itself. The non-motorised trips were predominantly walk (15.1%) with the other 2.3% using bicycle. It should however be noted that the Census data is likely to represent a time when the food processing plant was at its largest and the biggest employer, located within one mile to the north of the town centre.

4.14 The public transport mode share is relatively low and this could be because of the infrequency of services on certain routes as well as the distance from Haverhill to other key destinations.

4.15 The Journey to Work data has also been used to identify the work destinations of trips which originate in the relevant ward. This has allowed a percentage distribution to be calculated which gives a broad indication as to the direction of travel, and therefore the routes which would most likely be affected by any increase in trips.

4.16 Table 12 shows the overall broad direction of travel. The percentage distribution has been calculated based on the existing distribution from the 2001

Census data for Haverhill East ward for car driver commuters. The results are shown in Table 13.

4.17 It should be noted that this is a very broad level of analysis, and that changes in employment locations since the data was collected in 2001 could have had an effect on the distribution.

Table 12 – Trip Distributions for Haverhill North East based on 2001 Journey to Work Census Data

	Haverhill Northeast	Trip Distribution
Northeast	A143 – Bury St Edmunds	15.4%
Northwest	B1061 – Newmarket	2.7%
South	B1057 – Thaxted and Great Dunmow	0.3%
Southeast	A1017 – Braintree and Halstead	4.6%
East	A1092 – Sudbury	2.5%
West	A1307 – Cambridge and London	33.7%
Then split into:		
• A11 North	Newmarket	2.5%
• A11 South	London	13.9%
• A1307	Cambridge	11.7%
• Turn off before junction	Linton	5.6%
Central	-	40.9%

4.18 Some 41% of the Haverhill East commuter traffic in 2001 had a workplace in central Haverhill – this definition includes the Haverhill Business Park and the other industrial estates within the town.

4.19 The highest percentage of trips outside of the town centre is to the west, with some 34%, most of which turns left/ south at the A11. About 28% of the development traffic is suggested to use the A1307/A11 junction.

4.20 Of the remaining trips leaving Haverhill, approximately 15% head northeast towards Bury St

Capabilities on project:
Transportation

Edmunds on the A143. This direction includes Little Wrating, the location of the Vion Food Group site.

4.21 These distribution proportions have been compared with the assumptions made in the north west Haverhill development Transport Assessment:

- North 8%
- East and central 39%
- West 53%

This shows that the Transport Assessment work distributed a lower proportion to the north and within Haverhill; and more to the west and the A11.

4.22 The trip distributions used here have been applied to the trip generation (arrivals and departures) for the morning and evening peak hours shown. The results of this can be seen in Appendix B in a schematic diagram.

Capabilities on project:
Transportation

Review of Traffic Impacts

- 4.23 The results presented in Appendix B are based on allocating 2,500 new dwellings as stated in Policy CS12 of the St Edmundsbury Core Strategy Submission Document.
- 4.24 The following remarks are intended to identify the main pressures resulting from development of the area.
- 4.25 It should be noted that the trip rates are precautionary, based on the existing vehicle trip generation of dwellings in the appropriate ward. They could be reduced, to a varying degree, by up to 20 percent as in Haverhill there is potential for promoting employment within the town as well as improving bus connections to Cambridge and other key destinations.
- 4.26 The analysis shows that growth in northeast Haverhill would have a significant impact on the A1307 at the Meldham Bridge junction as vehicles using the Haverhill northwest relief road head west towards the A11 junction. This is particularly the case in the morning peak as traffic leaves the potential development for destinations in Cambridge and the south. This is a new junction, dimensioned in anticipation of development to the north of Haverhill.
- 4.27 The A11 junction itself will see increased traffic flows; some 145 vehicles per hour in the morning peak across the A11 towards Cambridge, and some 172 vehicles turning south on the slip road to join the A11. These flow increases, while significant, are not considered critical in themselves.
- 4.28 Due to the northwest and northeast relief roads, the net traffic impact on the Cangle junction is expected on balance to be a reduction, compared to the current situation, although concerns about congestion in the centre of Haverhill remain.
- 4.29 The junction of the A1017 and the road east of Haverhill Golf Course is predicted to have a flow increase of some 89 vehicles per morning peak hour wanting to turn left onto the A1071 Rowley Hill. The evening returning traffic wishing to turn right will require some operational and safety improvement at this location.

5. Transport Infrastructure Review

Potential Improvements

- 5.1 This Chapter considers the potential improvements that could be made in Haverhill as well as any initiatives which are currently underway. It also considers the potential sources of funding for implementing improvements.
- 5.2 These improvements are developed in the context of three opportunities to encourage more sustainable travel patterns:
- Self- containment of the new residential development;
 - Walk and cycle facilities linking the residential development to the surrounding employment opportunities and community facilities; and
 - Bus services and facilities.

Broad Location Requirements

- 5.3 A high degree of transport self containment can be specified in the design brief for new developments. This needs to consider the phasing and ultimate capacity of the site and the relationship with neighbouring local and town centres. Design features which can assist self containment include:
- Appropriate frequently used community facilities – schools, healthcare, local retail and leisure facilities – integrated into the pedestrian circulation pattern;
 - Local delivery of less frequently used and specialist community facilities – library, specialist healthcare, young persons’ activities – through a community hall; and
 - A proportion of the dwelling units to have integrated office/workshop/atelier ‘live/work’ accommodation.
- 5.4 The early delivery of these is important, to establish a local community focus and to offer options for sustainable travel behaviour from the start. This usually is a problem, with facilities only delivered when the full development potential of the site has been realised, but out-travel habits already established. Larger developments have more opportunities to fund and deliver such design features.
- 5.5 The full implementation of these design features, particularly a full range of schools, are considered to have the potential to reduce peak hour car travel by up to 5 percent. This is an approximate estimate, but is considered a cautious minimum.
- 5.6 The proposed areas of growth in northeast Haverhill already has a reasonable level of accessibility to facilities, as listed in Appendix A. Therefore, development at this location is already close to a full range of town retail and social facilities.

Walk and Cycle Facilities

- 5.7 As shown in Appendix A, the proposed area of growth is within 1km of Haverhill town centre. This means that there is considerable potential for a shift to walk and cycle for a wide range of trips for all purposes.
- 5.8 It is considered that there are relatively few current barriers to cycling and walking in Haverhill. The position of the growth area on the northeast of Haverhill means that walking to the town centre is an option for parts of the development closest to the town centre. However, cycling should be a feasible alternative for the whole development.
- 5.9 Given the scale of the proposed development, it is likely that this will be able to provide a number of services in its own right such as a primary school, doctors surgery, local shops, thus increasing the potential for internalisation within the site.
- 5.10 Any new cycle facilities should provide increased network connectivity, and ‘end to end’ routes from the residential areas to the work and town centre areas. Secure cycle parking facilities need to be provided at the closest convenient locations to the town centre.
- 5.11 Proposed cycle infrastructure could include:
- Provision of on road and shared use facilities along the A143 Wrating Road to provide a direct link from the development towards the town centre, existing schools and link with other existing facilities, including the old railway line.
 - Provision of on road and shared use facilities along Chalkstone Way to provide a link east and west towards the town centre (west) and industrial areas (east).
 - Provision of facilities through the Millfield Way estate area to link Chalkstone Road with the old railway line, town centre, bus station and industrial areas.

- Provision of facilities on the existing one way Queen Street/ Market Hill/ High Street. This could include a cycle contra flow system to assist penetration to the High Street from the A143 and A1017.
- Measures to encourage cycling to work, such as promoting green travel plans at the existing key places of employment within the town. This could benefit existing employees as well as new employees from the proposed development.

Bus Services and Facilities

- 5.12 As described in Appendix A, there is a number of existing bus services in Haverhill, including about two services per hour to Cambridge taking roughly 90 minutes.
- 5.13 Routes 13/13A/X13 and 344/345/346/347 pass close to the proposed development area and it should be possible to extend or partly re-route these to serve the development.
- 5.14 It is likely that the proposed scale of development may be able to justify additional bus services, or provide significant improvements to improve existing ones. A higher level of frequency is needed to link directly between the development, existing employment within Haverhill and Haverhill town centre.
- 5.15 Features to make bus travel more attractive could also be funded, including more express bus links to Cambridge.

Impacts on Existing Road Infrastructure and New road Infrastructure to Support the Proposed Development

- 5.16 Detailed work on background traffic growth has not been undertaken as part of this Study, and definitive traffic impact assessments will be needed to quantify the likely problems. Based on the connection assumptions given in Chapter 4, and the proposed trip generation and distributions, AECOM has identified the following locations where infrastructure improvements may need to be made.
- 5.17 The LDF increment of development is suggested to result in some 350 more vehicles per hour approaching the A11/A1307 junction from Haverhill (in addition to the traffic generated by the north west Haverhill development). This relatively small

increment will need to be reviewed in the context of the existing level of service at the junction.

- 5.18 The eastern connections of the north east relief road to the A1107 Sturmer Road / Rowley Hill need further examination. At present, the north east relief road is assumed to connect to Coupals Road north of the Haverhill Golf Course, and be used by the eastwards traffic from the new development, some of the town centre related traffic, and some of the east <-> north through traffic, if the route is convenient. Some form of improvement is considered at these locations, and an allowance for a operational and safety improvement has been allowed for to mitigate and improve conditions.
- 5.19 The north west development TA suggests that there is ample reserve capacity at the new A1307 / north west relief road Meldham Bridge junction. This is considered to be more than sufficient to cope with the future impact of the north east development.
- 5.20 The changed balance of traffic at the town centre 'Cangle' junction can be summarised as follows:
- The completion of the north west development, the Tesco development, and the first north west part of the relief road is suggested in the north west TA to result in a drop of some 400 vehicles per hour in the morning peak (based on a diversion of 50% in the west <-> north traffic to the north west relief road, and the TA generation assumptions);
 - The completion of the north east portion of the relief road will divert some east <-> north traffic away from the 'Cangle'; and
 - A proportion of the new north east development traffic total with a connection with the town centre (540 vehicles per morning peak hour, arriving and departing) will be added to the 'Cangle' junction.

On balance, it is highly likely that the long term impact on the 'Cangle' will be to reduce the approach traffic.

Costs and affordability

- 5.21 The following section draws on the analyses and judgements made, and summarises the proposed transport facilities judged necessary to support the safe, convenient and sustainable connection of the

broad location to the existing networks and land uses, without detriment to the existing infrastructure.

- 5.22 Expected distributor roads accessing and crossing the development are excluded, since they are an integral part of the development layout. The costs are highly speculative and indicative, based on unit costs from recent work, but without any specific local validation. They are used to suggest a range of per dwelling contribution which would be required.
- 5.23 The following provisional conclusions on costs and affordability can be drawn:
- The north east development is a logical and convenient extension to Haverhill, convenient for the town centre facilities;
 - The estimated per dwelling cost estimate of £1,080 for transport improvements is relatively low in the regional context;
 - The costs are largely related to efficient improvement to existing facilities, rather than completely new infrastructure;
 - The potential for encouraging sustainable transport behaviour in the north east development is encouraging, given the proximity of employment, education, community and commercial facilities;
 - The potential attractiveness of the north east relief road as a diversion route for through traffic has not been studied in detail, and so the junction requirements at the eastern end have not been explored in detail, but a reasonable allowance has been made.
- 5.24 While some contribution (perhaps £0.25M per annum) can be assumed to continue to be spent on local safety and sustainable transport schemes from SCC funding sources, the overwhelming majority of funding will need to come from developers' contributions.

Table 13 – Haverhill North East (2,500 dwellings)

	Proposed facility	Indicative cost (£000) prior to occupation
Connection assumption	The developer is expected to improve the north east part of the relief road as part of the local distributor system, connecting to a roundabout on the A143 Wrattling Road, and to Coupals Road.	Part of the development layout cost
Internal trip assumption	The area lies close to the Haverhill town centre, within easy walking and cycling distance, so no particular on site mixed use arrangements are needed.	
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with new bus services and cycle routes.	£200
Walk/cycle links to neighbouring communities and the town centre	Safe and convenient new walk and cycle routes will need to be established connecting the new development to the town centre, and the employment opportunities to the south east of the town. This will need to include one or two crossings of the A1017 Sturmer Road, and targeted facilities accessing the schools.	£500
Bus service enhancement	Adaptation of the existing bus routes to provide convenient local links as part of the wider route network. Also a possible Haverhill circular minibus route to provide frequent convenient access from all the outlying residential areas to the town centre as an alternative to the short walking and cycling distances. The enlarged market may allow some express services linking to Cambridge, Braintree, and Bury St Edmunds to be overlaid on the existing pattern of services.	Revenue support over the first five years of occupation totalling £1,000 Bus priority improvements £1,000
Traffic management measures	Bus priority facilities and traffic management improvements within and around the town centre. May require some junction improvements on Coupals Road and the A1017 Sturmer Road / Rowley Hill. to the	£300 £1,000
New road infrastructure	May be some requirement for management at the A11/A1307 Park Hill junction.	£1,000 (indicative)
TOTAL		£5,000
Per dwelling		£2.00

Conclusions

Conclusions

- 6.1 This review of the St Edmundsbury Submission Document in relation to proposed development to the northeast of Haverhill has provided an initial evidence base which shows that the allocation is feasible in transport terms, with relatively modest transport infrastructure and facilities requirements.
- 6.2 The A11/A1307 junction is likely to need some minor changes to respond to the additional flows, and this has been allowed for. It is expected, however, that the planned express bus services (also allowed for) will reduce (but not eliminate) the need for this.
- 6.3 The proposed development can be managed in a sustainable way, with manageable impacts on the town and the Trunk Road. The town as a whole needs to be involved in the shift to lower car use.
- 6.4 The north east relief road will be provided as part of the development, linking the A143 Wrattling Road to Coupals Road running round the north of the golf course. Safety and environmental improvements are considered feasible, and will be needed on the existing roads linking to the A1017 Sturmer Road / Rowley Hill. This local route will provide some limited diversion from the town centre. A more detailed traffic impact study will be required to design the required improvements at the eastern connection between the north east relief road and the local road network.

Appendix A – Accessibility to Facilities

Appendix A – Accessibility to Facilities

Appendix A – Accessibility to Facilities contains the following:

- Bus and rail timetable information for Haverhill;
- Key services for the proposed broad direction of growth; and
- A plan for the proposed broad direction showing the locations of key services.

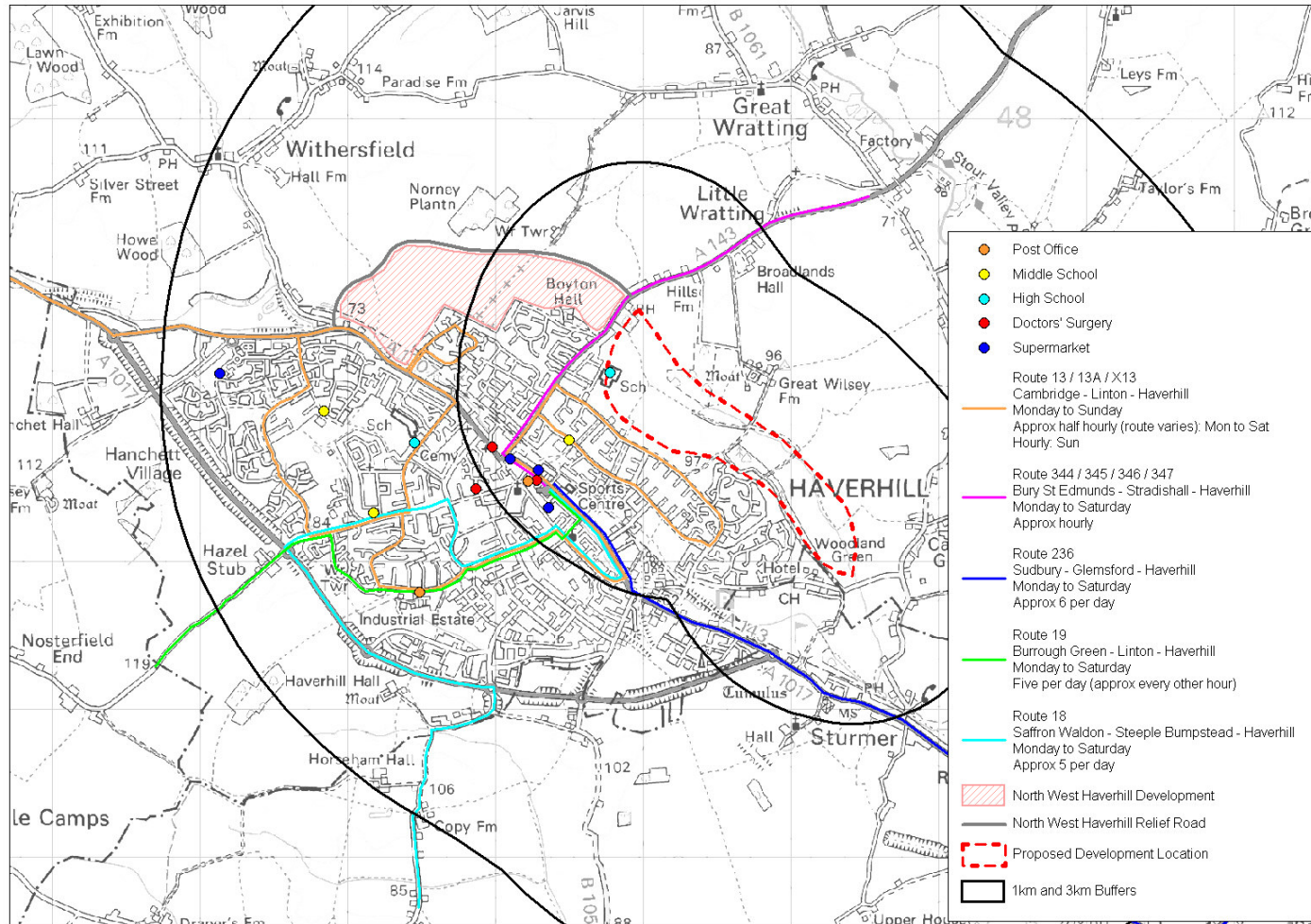
Appendix A 1 – Haverhill Key Services

	Within 1km	Within 3km
Post Offices	Haverhill	Clements
Middle Schools	Chalkstone Middle School	Castle Hill Community Middle School Parkway Middle School
Upper Schools	Samuel Ward Upper School and Technology College	Castle Manor Upper School
Doctors' Surgeries	Crown Health Centre Stourview Medical Centre	Dr Cornish & Partners Dr Mohan & Partners
Supermarkets	Aldi Co-operative Tesco	Sainsburys

Appendix A 2– Haverhill Bus and Rail Services

Number	Route	Days of Operation	Frequency	Comment
13/13A/ X13	Cambridge – Linton - Haverhill	Mon to Sun	Approx half hourly (route varies slightly between the three services): Mon to Sat Hourly: Sun	Performs useful intra-urban function, but has a long journey time to Cambridge
89A	Great Yeldham – Ridgwell – Birdbrook – Sturmer - Haverhill	Mon to Sat	Three per day	
89B	Halstead – Great Yeldham - Haverhill	Friday	One per day	
19	Burrough Green – Linton - Haverhill	Mon to Sat	Five per day (approx every other hour)	
8	Toppesfield - Haverhill	Friday	One per day	
342	Haverhill – Abbots Road Town Service	Mon to Sat	Three per day	
59	Clavering – Audley End – Saffron Walden - Haverhill	Mon to Sat	Approx three per day	
18	Saffron Walden – Steeple Bumpstead - Haverhill	Mon to Sat	Approx five per day	
225	Haverhill - Newmarket	Mon to Sat	Four per day	
236	Sudbury – Glemsford - Haverhill	Mon to Sat	Approx 6 per day	
344/345/ 346/347	Bury St Edmunds – Stradishall - Haverhill	Mon to Sat	Approx hourly	Useful access to Bury St Edmunds
16	Fen Estate/Cambridge City Centre – Fulbourn – Haverhill	Mon to Sat	Approx four per day	
341	Wickhambrook - Haverhill	Mon to Sat	Four per day	

Appendix A 3 – Haverhill Key Services



Appendix B – Traffic Impact Analysis

Trip Generation Methodology

This Appendix describes the analysis of trip generation and trip distribution for each of the eight assumed sites, to suggest a precautionary upper bound road traffic impact.

In order to calculate a broad person trip generation for each of the proposed allocation sites, AECOM has used a methodology based on the following documents:

- 2001 Census
- National Travel Survey 2007
- Department for Transport 'Focus on Personal Travel'.

From the 2001 Census data, the following information has been obtained:

- Total resident population of each ward;
- Journey to work data by mode;
- The number of households within each ward;
- Average household size of each ward

Data on person trip making has been taken from the National Travel Survey. The National Travel Survey provides a national view of personal travel information for the country as a whole.

Table 4.1 of the National Travel Survey provides details of the national average number of trips per persons by trip purpose. A summary of this and the percentages that this equates to is shown in Table B1.

Table B1 - Average Number of Round Trips per Person per Year

Purpose of Travel	Trips per person/ year	Trips %
Commuting	157	15.8%
Business	30	3.0%
Education	62	6.3%
Escort Education	43	4.3%
Shopping	198	20.0%
Other Escort	96	9.7%
Personal Business	103	10.4%
Visiting Friends (both at private home and elsewhere)	156	15.7%
Sport & Entertainment	63	6.4%
Holidays & Day Trips	41	4.1%
Others (including just walk)	44	4.4%
All Purposes	992	100.0%

Source: Table 4.1 of the National Travel Survey

Using the Census and National Travel Survey data, the annual average daily trip rate per household in each of the wards identified can be calculated.

Average Daily Trip per Household (one-way) = 992 (NTS total number of trips per person per year) X Average Household Size / 365 days.

Table 2.9 of the DfT 'Focus on Personal Travel' Document would suggest that for all trips, the weekday Monday to Friday average is 5.3% higher than the Monday to Sunday average. Therefore the weekday number of trips per household is 5.3% higher.

The NTS considers travel in round trips, and it is necessary to double the average daily trip per household figure to reflect two way trips i.e. arrivals and departures.

Table 8.3 of the National Travel Survey details that 12% and 8% of all weekday trips take place between the peak periods of 08:00 – 09:00 and 17:00 – 18:00 respectively.

Table 8.2 of DfT Focus on Personal Travel details of the proportion of trips based on the trip purpose and time of day during the peak hours. These proportions are broadly comparable with the proportions detailed in Table 8.3 of the National Travel survey. These proportions are shown in Table B2.

Table B2 – Trip Purpose Split during AM and PM Peak

Purpose of Travel	AM Peak (08:00 - 09:00)	PM Peak (17:00 - 18:00)
Commuting	25%	36%
Business	4%	4%
Education	29%	2%
Escort Education	18%	1%
Shopping	4%	12%
Personal Business	14%	20%
Visiting Friends	2%	14%
Sport & Entertainment	1%	5%
Holidays & Day Trips	1%	3%
Others (including just walk)	2%	3%
All Purposes	100%	100%

Source: Table 8.2 of DfT Focus on Personal Travel

Using the information above, it is possible to estimate the weekday and peak hour trips generated at each of the allocation sites based upon the ward in which they are located. The methodology for this is outlined below:

Number of weekday peak trips per site =

$$\begin{aligned} & \text{Proposed Number of Dwellings} \\ & \quad \times \\ & \text{Average Number of Trips per Household.} \\ & \quad \times \\ & \text{12\% or 8\% for the AM and PM Peaks respectively.} \end{aligned}$$

These trips can then be assigned to the mode. For the Commuter and Business trips, AECOM has applied the Journey to Work data from the 2001 Census. For Shopping, Education and Other Trips, AECOM has applied the mode shares outlined in Table 7.1 of the National Travel Survey.

In order to create a vehicle trip rate per dwelling AM and PM arrival and departures, AECOM has used the TRICS database. The average trip rates for private houses (all sites) has been calculated, the arrival and departure profile applied to the AM and PM trips from the allocation sites. The resulting trip generation rates and totals are given in Chapter 4 of the Report.

Trip Distribution

AECOM has distributed the traffic generated by the Haverhill northeast potential site onto the road network based on the broad patterns found in 2001 Census data. Assumptions have been made, however, regarding the precise access points and routes used. The following table summarise the trip distribution assumptions made. The figure at the end of this Appendix shows the resulting traffic patterns, based on the precautionary site capacities, and the higher trip rates.

Haverhill Trip Distribution

Direction	Route Assumption
Northeast bound (towards Bury St Edmunds)	A143 Wrating Road north
Northwest bound (towards Newmarket)	A143 Wrating Road north to B1061 Thurlow Road
Southbound (towards Thaxted and Great Dunmow)	A143 Wrating Road south to Cangle junction to A1017 Ehringshausen Way (Sturmer Road) east to B1057 Bumpstead Road south
Southeast bound (towards Braintree and Halstead)	Northeast relief distributor road east to road east of Haverhill Golf Course south to A1017 Sturmer Road east
Eastbound (towards Sudbury)	Northeast relief distributor road east to road east of Haverhill Golf Course south to A1017 Sturmer Road east
Westbound (towards A11 junction)	Northwest relief road west to A1307 Meldham Bridge junction to A1307 Park Hill west

Appendix B 1 – Haverhill Trip Distribution

