AECOM

Local Development Framework: Transport Impacts - Stowmarket

Suffolk County Council and Mid Suffolk District Council
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Local Development Framework – Transport Impacts - Stowmarket

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Table of Contents

1 Introduction 3
1.1 This Commission 3
1.2 Study Programme 4
1.3 This Document 5

2 Stowmarket AAP – Issues and Options -Sites 7
2.1 Review of the Area Action Plan – Issues and Options – Sites (April 2009) 7
2.2 Important Sites 8

3 Scenarios and Policy Context 14
3.1 Existing Situation 14
3.2 Scenario Components and Horizons 15
3.3 Scenarios Examined 16
3.4 Suffolk County Council Local Transport Plan 2006-2011 17
3.5 Stowmarket Local Transport Action Plan (2002) 19
3.6 Stowmarket Area Action Plan: Infrastructure Delivery Programme 19

4 Traffic Impacts Assessment 22
4.1 Approach 22
4.2 Analysis 27
4.3 Potential Sustainable Transport Measures 34
4.4 Judgements on Traffic Flow Results 36

5 Caveats and Conclusions 42
5.1 Caveats and the need for further work 42
5.2 Conclusions on the questions posed 42

Tables

Table 1 – Stowmarket Area Action Plan Timetable (October 2009) 8
Table 2 – Sites in the Stowmarket West Area (AAP 'Sites' document, April 2009) 9
Table 3 – Sites in the Stowmarket Central Area (AAP 'Sites' document, April 2009) 10
Table 4 – Sites in the Stowmarket East Area (AAP 'Sites' document, April 2009) 11
Table 5 – Sites in the Stowmarket South Area (AAP 'Sites' document, April 2009) 11
Table 6 – Overall Site Summary 12
Table 7 – Car Mode Residential Trip Rates per Ward 23
Table 8 – 'Do Nothing' Residential Trip Generation 23
Table 9 – 'Do Something' Residential Trip Generation 23
Table 10 – 'Sustainable' Residential Trip Generation 24
Table 11 – Potential Increase in Employment under Three Growth Scenarios 25
Table 12 – B1 (Offices, R&D, Light Industry) Average Person Trip Rates per Employee 25
Table 13 – B2 (General industry and manufacturing) Average Person Trip Rates per Employee 25
Table 14 – B8 (Warehousing and distribution) Average Person Trip Rates per Employee 25
Table 15 – B1 (Offices, R&D, Light Industry) Land Use Vehicle Trip Generation 26
Table 16 – B2 (General industry and manufacturing) Land Use Vehicle Trip Generation 26
Table 17 – B8 (Warehousing and distribution) Land Use Vehicle Trip Generation 26
Table 18 – Total Employment Vehicle Trip Generation (B1, B2 and B8 Land Uses) 26
Table 19 – Results of 'Do Nothing' Approach 27
Table 20 – Mode of Transport Adopted for Journey to Work Trips (%) based on 2001 Census 29
Table 21 – Results of 'Do Something' Approach 30
Table 22 – Results of 'Sustainable' Approach 32
Table 23 – Results of Approach Comparing 'Do Nothing' and Town Wide Sustainable Approaches 34

Table 24 – Potential Sustainable Transport Interventions……..38
Table 25 – Summary of Traffic Flows in Different Scenarios……..39

Figures
Figure 1 – AAP Areas of Growth in Stowmarket 8
Figure 2 – Census Ward Boundaries for Stowmarket.....22

Appendix Figures
Appendix A 1 – Average Number of Trips per Person per Year 45
Appendix A 2 – Trip Distribution by Purpose during AM and PM Peak 46

Appendix B1 – residential Generated Vehicle Trip Distribution 'Do Nothing' case - Arrivals

Appendix B 2 - Residential Generated Vehicle Trip Distribution 'Do Nothing' case - Departures

Appendix B 3 - Residential Generated Vehicle Trip Distribution 'Do Something' - Arrivals

Appendix B 4 – Residential Generated Vehicle Trip Distribution 'Do Something' – Departures

Appendix B 5 – Residential Generated Vehicle Trip Distribution Sustainable case – Arrivals

Appendix B 6 - Residential Generated Vehicle Trip Distribution Sustainable case – Departures

Appendix B 7 - Employment Generated Vehicle Trip Distribution - Arrivals

Appendix B 8 - Employment Generated Vehicle Trip Distribution - Departures

Appendix B 9 - Residential AWTP Generated Vehicle Trip Distribution - Arrivals

Appendix B 10 - Residential AWTP Generated Vehicle Trip Distribution - Departures

1 Introduction

1 Introduction

1.1 This Commission

1.1.1 This Report responds to an April 2009 brief from Suffolk County Council (SCC) to examine transport infrastructure issues related to the potential allocations of dwellings and employment sites in Stowmarket envisaged in the Mid Suffolk District Council (MSDC) Local Development Framework. It builds upon previous work carried out by AECOM (formerly Faber Maunsell) in support of the Mid Suffolk Core strategy carried out in May 2008[1]. Given the stage in the LDF process, and the data available, this report comprises an overview of the likely scale of impact likely to result from the allocations considered and of the issues likely to arise from them.

1.1.2 This work has been commissioned following the adoption of Mid Suffolk District's Local Development Framework (LDF) Core Strategy in support of the process of developing an Area Action Plan (AAP) to guide the way in which the Core Strategy will be implemented in Stowmarket.

1.1.3 The Core Strategy originally set out a commitment to accommodate 1,400 new dwellings in the Stowmarket Urban area up to the year 2021, including the reuse of some brownfield sites.. Initially, only 'broad directions of growth' were established. In order to translate these into specific allocations, further work needs to be carried out in respect of the impact that these development areas would have on the transport network and the infrastructure required to support them. More recently, the more detailed work on the AAP Proposed Submission has rolled forward the requirement to total 2,000 by 2031, to respond to developments in the emerging Regional Spatial Strategy (RSS).

1.1.4 Given this evolving situation, for both the location and scale of development, this Study has had to make some assumptions for the analyses, and then validate the results against the successive stages in the LDF process.

1.1.5 Stowmarket is served by the A14 Trunk Road which passes to the north of the town, and hence the Highways Agency has an important role in considering traffic circulation around Stowmarket. The existing Junction 50 provides an important access to the town. The new Junction 49 to the north west of the town currently provides an indirect link to the town, and a more direct new link is an important issue in this work examining residential development to the north west of the town, as discussed later. During 2008, AECOM (then known as Faber Maunsell) carried out an exercise to establish if this level of growth could be accommodated on the Trunk Road network in the vicinity of the town. This was shown to be the case (see footnote 1).

1.1.6 However, because of the local geography of the town, in which employment is concentrated to the south east (around Junction 50 of the A14), with the potential residential growth areas to the north west (around Junction 49), one of the Highways Agency's concerns is the possibility of 'junction hopping' in which people making local trips use the Trunk Road, joining the A14 at one junction and leaving it at the next.

1.1.7 This concern needs to be seen alongside the District and County Council's concerns about increasing volumes of traffic on routes either through the Town Centre or through sensitive areas such as Combs Ford. A pattern of development that resulted in significant volumes of home-to-work trips between residential areas to the north west and employment areas to the south east of the town, would risk one or other of these effects.

1.1.8 MSDC identified four key junctions within Stowmarket that would need to be taken into consideration. These are:

- Star Lane / Union Road;
- Combs Lane western end;
- Combs Ford junction; and

[1] Faber Maunsell, (May 2008) *'Mid Suffolk LDF Core Strategy – Transportation Evidence'*

- Station Road / Gipping Way.

1.1.9 There is a longstanding commitment (known as 'The Luck Decision') on the part of the District Council, in which further growth of housing to the north west of Stowmarket is linked with a requirement for a new link road connecting these sites with the A14 Trunk Road to the north of the town, at Junction 49. The rationale behind this is that the traffic generated by a further expansion of housing to the north west would impose an unacceptable burden of congestion and environmental impact upon the town centre and Combs Ford area.

1.1.10 The link road was seen as a way of facilitating the movement of external traffic generated by such sites to and from the Trunk Road network in a way that would minimise its impact on the town. It would also provide for through movements between surrounding villages, such as Great Finborough and Rattlesden, and the Trunk Road.

1.1.11 More recently, MSDC has adopted a policy of favouring sustainable travel over providing for the private car, and the link road is now seen as a costly alternative that needs to be justified before its inclusion in the Stowmarket AAP Infrastructure Delivery Programme. On one hand the provision of a connection to the A14 may facilitate commuting by car that would undermine any measures to support sustainable travel in the new neighbourhoods. Alternatively, a link might constitute a complementary measure to the transport plan for the town. By taking out traffic legitimately wishing to move across town for connections to Ipswich and the A14 eastbound and offering a more direct and usable access than the circuitous route now available, traffic in the town centre would be reduced. Congestion relief in the town centre can be used to support the workability of future bus services, making them a more attractive proposition. The link would also potentially reduce the burdens on Combs Lane and at the Combs Ford junction.

1.1.12 A decision to abandon the historic aspiration for a link road would have to be soundly based, as, indeed, would a decision to retain it (or, to identify a compromise position). The potential of a sustainable transport package to accommodate traffic generated by new development without recourse to new road building must be carefully weighed against the possibility that, even with the sustainable transport measures in place, new development on the scale envisaged would impose an intolerable burden upon the town centre and Combs Ford areas.

1.1.13 AECOM has therefore been commissioned to consider the following questions:

1. How can new development be brought forward in accordance with the Core Strategy in such a way as to avoid A14 'junction hopping' (on the one hand) and excessive traffic through the Town Centre and Combs Ford areas (on the other)?;
2. What is the potential for internalisation of trips (within the town) and reductions in car mode share?;
3. How can a choice be made between retaining the requirement for a new link road to A14 Junction 49 and pursuing sustainable transport measures either with or without a partial link road?; and
4. Could a further expansion in dwelling numbers be accommodated on this basis?

1.2 Study Programme

1.2.1 This Transport Impacts Study was commissioned in April 2009, following the publication of the Stowmarket Action Area Plan – Issues and Options – Sites (April 2009). The information in that Plan document was used to make assumptions for the analysis work. The initial analysis was presented and discussed at the consultation exercise Open Day in June 2009. Discussions on the policy responses and infrastructure and facilities requirements continued through the summer, with a complete report presented in August 2009, to inform the drafting of the AAP Proposed Submission, which was issued for consultation in October 2009.

1.2.2 Following further minor editing this Final Report has been re-issued in December 2009, to conclude the initial round of analysis work.

1.3 This Document

1.3.1 This Report is organised as four Chapters following this Introduction:

- Chapter 2 discusses the Stowmarket AAP – the Issues and Options Sites, and the other background planning documents;
- Chapter 3 discusses the Consultants' chosen scenario assumptions, in the context of County and other policy frameworks;
- ,Chapter 4 describes the analysis process, and presents the results; and
- Chapter 5 discusses the conclusions.

1.3.2 Detailed calculations are provided as Appendices.

2 Stowmarket AAP – Issues and Options - Sites

2 Stowmarket AAP – Issues and Options -Sites

2.1 Review of the Area Action Plan – Issues and Options – Sites (April 2009)

2.1.1 The 'Stowmarket Area Action Plan (AAP) Issues and Options – Sites' (April 2009) document contains MSDC's initial recommendations on all sites put forward through the 'land bid' process. It covers Stowmarket and the surrounding villages. The document seeks to obtain the views of the public with regards to the sites put forward.

2.1.2 Mid Suffolk adopted their Core Strategy in September 2008. The Core Strategy sets out visions, objectives and strategy for the whole district. An AAP aims to provide a more detailed planning framework for areas where significant change or conservation is needed as based on the Government's Planning Policy Statement 12 (PPS 12).

2.1.3 The AAP - Issues and Options – Sites for Stowmarket builds on information provided in the Core Strategy, and takes account of employment, retail, transport and housing studies that have been undertaken for the Council. Non-statutory planning related work, such as the Stowmarket Masterplan (June 2008) will also be used to support the document.

2.1.4 The Stowmarket Masterplan was adopted by Mid Suffolk in June 2008 and is a non-statutory planning document that concentrates on Stowmarket and establishes key issues and possible areas for the future growth of the town. The Masterplan has resulted in debate regarding the issues of concern to residents, businesses and visitors of the town. It has been invaluable in identifying areas of opportunity for making positive changes or conserving important social and environmental assets, while at the same time increasing people's awareness and understanding of the planning system. The Masterplan is a key piece of evidence that is used to support the Stowmarket AAP.

2.1.5 Following the consultation period, the final Stowmarket AAP Proposed Submission document Was developed. This contains planning policies and allocates land uses for sites. MSDC has chosen to split the 'Issues and Options' consultation phase into two, concentrating separately on policies and sites. This is to ensure that comments and representations received are more specific to the matter. Policies and sites have been brought together to form a single document in October 2009, for the next stage of the consultation.

2.1.6 One of the aims of the Stowmarket AAP is to help prioritise and select which sites should come forwards in the first instance and how much of the proposed land should be made available. The AAP 'Sites' document aims to sort through the sites, removing those which are unsuitable and allowing others to be taken forward to the next stage for further analysis. It highlights the necessity for an allocation to pass through the planning application process and be granted planning permission even if the sites are allocated in the final adopted Stowmarket AAP.

2.1.7 The current (October 2009) timetable for the various stages in the process is shown in Table 1.

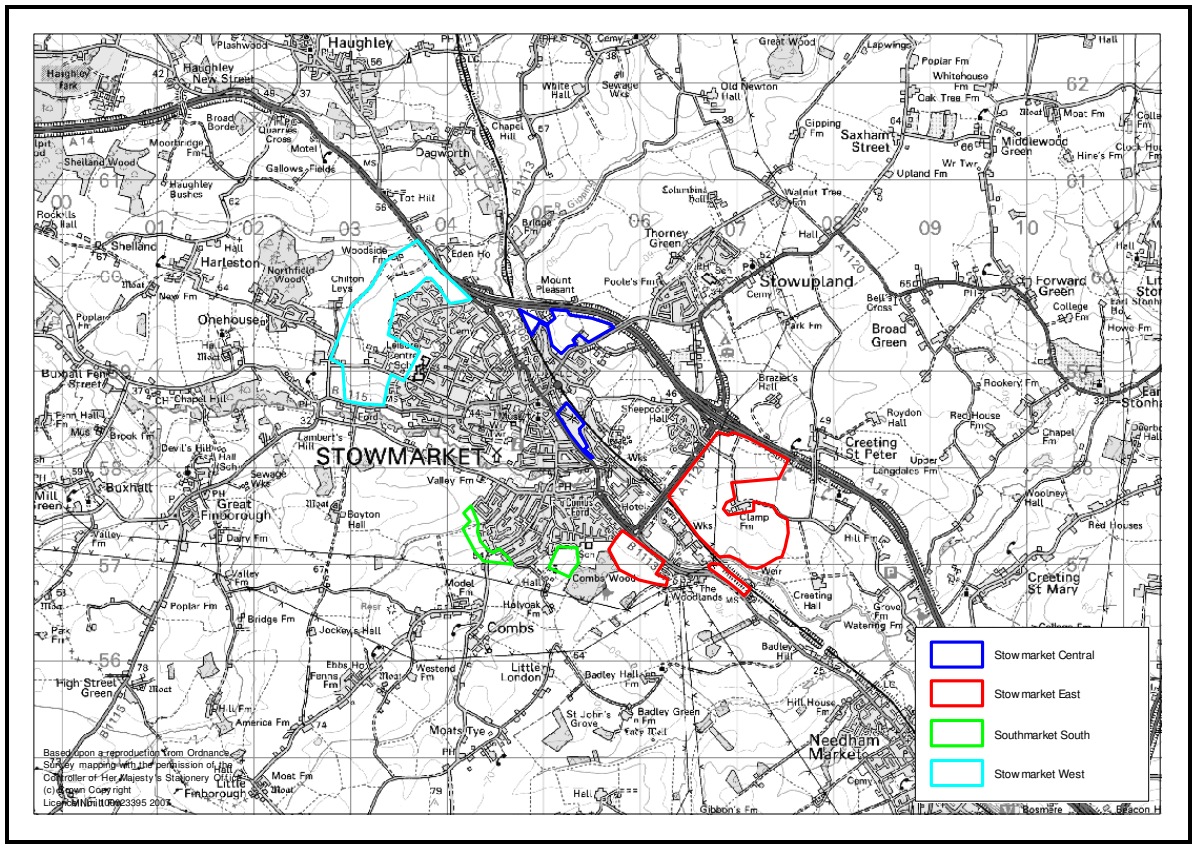
Table 1 – Stowmarket Area Action Plan Timetable (October 2009)

Public consultation on the Issues and Options policy document	December 2008 – January 2009 COMPLETED
Public consultation on the Issues and Options site document (relevant sites / 'land bids' related to the Stowmarket Areas Action Plan)	April – May 2009 COMPLETED
Public consultation on the Proposed Submission document (policy and sites combined into one document)	October/November 2009 UNDER WAY
Submission to the Secretary of State	December 2009 ESTIMATED
Independent examination of the Stowmarket Area Action Plan	Spring 2010 ESTIMATED
Adoption of the Stowmarket Area Action Plan	June 2010 ESTIMATED

2.2 Important Sites

2.2.1 The AAP 'Sites' document considers sites in and adjoining Stowmarket including in the villages of Haughley, Old Newton, Stowupland, Combs, and Great Finborough. This Study has only considered the main impact in Stowmarket itself. In the AAP 'Sites' document, Stowmarket has been split into four possible areas of growth. These are: Stowmarket West, Stowmarket Central, Stowmarket South and Stowmarket East and are illustrated in Figure 1.

Figure 1 – AAP Areas of Growth in Stowmarket



2.2.2 MSDC has provided information regarding the area of each of the sites and the density based on 30 dwellings per hectare. In total, the potential capacity of the allocated areas in Stowmarket considerably exceeds the initial allocation of 1,000 new greenfield dwellings by 2021, and the 1,600 greenfield dwellings by 2031. The actual target number of homes may increase during the plan preparation and implementation period as the RSS "floor not a ceiling" argument facilitates additional development proposals subject to the planning principles set out in Development Management policies.

2.2.3 Both PPG3 and the Urban Capacity Study (2006) which focus on Stowmarket use a density of 30 dwellings per hectare. However, it should be noted that this does not cover land uses such as schools, spine roads, doctors' surgeries and other neighbourhood facilities, which also has to be accommodated within the development area.

2.2.4 Initial assumptions regarding the number of jobs that the employment sites could generate under three growth scenarios have been estimated with help from MSDC. This is detailed further in Table 11 of this report.

2.2.5 It should be noted that the site details have been taken from the Stowmarket AAP, based on owners' submissions. Information regarding the size of the site and the density has been taken from information provided separately by MSDC, reflecting their land use policies.

Stowmarket West

2.2.6 The AAP 'Sites' document lists ten sites in the Stowmarket West area (see Table 2). Of these ten sites, one is employment only. In total, the Stowmarket West area has the potential to contribute 1,608 dwellings and 3.5ha of employment land. The figures generally conform with those of the Strategic Housing Land Availability Assessment (SHLAA) or have been assessed on the basis of 30 homes per hectare x 0.6 for open space and other non development uses.

Table 2 – Sites in the Stowmarket West Area (AAP 'Sites' document, April 2009)

Site Number	Location	Details	Size (ha)	No of dwellings
SAAPS 47	Land south of Union Road, opposite Chiltern Nursing Home, Stowmarket.	Residential / employment / community facilities	15.3	300
SAAPS 54	Land at Chilton Leys, Stowmarket	Mixed use – residential / community use	45.6	900
SAAPS 57	Land abutting Shepherds Lane / A14, Stowmarket	Residential / employment	4.9	42
SAAPS 64	Chilton Fields, Stowmarket	Strategic development	12.6	264
SAAPS 65	Kingsfield Centre, Onehouse Road / Chilton Way, Stowmarket	Mixed use – residential / education / open space	2.7	52
SAAPS 66	Danecroft Cottage, Stowmarket	Residential (eco-housing)	2.4	5
SAAPS 70a and 70b	Land at Chilton Leys Farmhouse, Onehouse, Stowmarket	Residential	1.5	36
SAAPS 71	Land at Reed Willows Industrial Park, Finborough Road, Stowmarket	Residential	0.5	9
SAAPS 73	Land at Tot Hill service	Employment	3.5	Employment

	station, adjacent to A14, Stowmarket			only
Late entry	Fielden Tye, Starhouse Lane, Onehouse	Residential	Late entry no information provided	
TOTAL			**89**	**1,608**

Stowmarket Central

2.2.7 Table 3 show the sites in the Stowmarket Central area. According to information provided by MSDC, SAAPS 75 is the residential portion of the Bosch Atco site (SAAPS 53).

2.2.8 In total, Stowmarket Central could provide 514 dwellings and 8.7ha of employment land.

Table 3 – Sites in the Stowmarket Central Area (AAP 'Sites' document, April 2009)

Site Number	Location	Details	Size (ha)	No of dwellings
SAAPS 49, 50a and 50b	Land at Prestons Hill, Stowmarket and Ashes Farm, Stowmarket (land both sides of Newton Road, Spring Row)	Residential	22.0	250
SAAPS 53	Land off Gipping Way, Stowmarket	Mixed use – residential / retail / employment	8.7	Employment only
SAAPS 63	Stowmarket Town Football Club	Residential	1.2	35
SAAPS 67	Land at Bury Road roundabout and A14 flyover, Stowmarket	Residential / employment	0.5	0
SAAPS 68	Land adjacent to The Uplands and Uplands Court, Stowupland Road, Stowmarket	Residential	0.5	9
SAAPS 69	Land east of Stowmarket Station, including Council Depot at Creeting Road, Stowmarket	Residential	1.8	64
SAAPS 72	Land off Prentice Road, Stowmarket	Residential – car-free	3.0	25
SAAPS 75	Land on Gipping Way, forming part of the Atco Qualcast Suffolk Works site, Stowmarket	Employment	2.1	131
Late entry	Land south of Stowupland Road, to rear of Hill Farm, Stowmarket Development Area / Cedars Park, Stowmarket	Residential	Late entry no information provided	
TOTAL			**39.8**	**514**

Stowmarket East

2.2.9 Sites to the east of Stowmarket (Table 4) are largely employment based. MSDC has not provided any information regarding SAAPS 76.

2.2.10 In total, Stowmarket East would contribute 24 dwellings plus 116.1ha of employment land.

Table 4 – Sites in the Stowmarket East Area (AAP 'Sites' document, April 2009)

Site Number	Location	Details	Size (ha)	No of dwellings
SAAPS 52	Land adjoining Creeting Road, Stowmarket	Residential	2.1	24
SAAPS 58	Land at eastern end of Cedars Park, Stowmarket	Retail	2.9	Employment only
SAAPS 59	Land adjoining A1120 Cedars Link Road, Stowmarket	Employment	41.0	Employment only
SAAPS 60	Land adjoining A1120 Cedars Link Road, Stowmarket	Strategic Freight Interchange	30.2	Employment only
SAAPS 61	Land adjacent to Needham Road, Stowmarket	Mixed use – residential / employment	17.6	Employment only
SAAPS 62	Land adjoining Cedars Link Road, Needham Road, Stowmarket	Employment	2.0	Employment only
SAAPS 74	Land off Mill Lane, A1120 / A14, Stowmarket	Employment	22.4	Employment only
SAAPS 76	Land off B1113, Mill Field, Badley	Residential	No information provided	
TOTAL			**118.2**	**24**

Stowmarket South

2.2.11 Table 5 shows the sites that are within the Stowmarket South area and the size of each of these sites alongside the associated the density of each site.

2.2.12 Stowmarket South only contains residential sites and these together would provide 300 dwellings.

2.2.13

Table 5 – Sites in the Stowmarket South Area (AAP 'Sites' document, April 2009)

Site Number	Location	Details	Size (ha)	No of dwellings
SAAPS 48	Land off Farrier's Road, Stowmarket	Residential	5.6	150
SAAPS 51	Land to rear of Milden Close / Chattisham Close, (adjoining Lavenham Park), Stowmarket	Residential / recreation	6.2	0
SAAPS 55	West side of Poplar Hill, Stowmarket	Residential	4.0	150
SAAPS 56	East side of Poplar Hill, Stowmarket	Recreation	2.1	0
TOTAL			**17.9**	**300**

Overall Site Summary

2.2.14 Table 6 gives an overall summary split per area as to the amount of employment land (in hectares) and number of dwellings included in the AAP. From this table, it can be seen that the majority of new dwellings would be located in the Stowmarket West area with the greatest proportion of new employment in the Stowmarket East area.

2.2.15 Thus the AAP 'Sites' document identifies more than sufficient sites to achieve the longer term RSS targets.

Table 6 – Overall Site Capacity Summary (AAP 'Sites' document, April 09)

	Employment Area (ha)	No of dwellings
Stowmarket West	3.5	1,608
Stowmarket Central	8.7	514
Stowmarket East	93.7	24
Stowmarket South	0	300
TOTAL	**105.9**	**2,446**

3 Scenarios and Policy Context

3 Scenarios and Policy Context

3.1 Existing Situation

3.1.1 Stowmarket is the largest town in Mid Suffolk district. According to the Stowmarket Local Transport Action Plan (SLTAP) it has a population of around 14,000 (2002). It lies south of the A14(T) with Bury St Edmunds to the north west and Ipswich to the south east. The A14 is accessible from Stowmarket via junctions 49 and 50. A new all access grade separated junction 49 was opened in February 2009 as part of the A14 Haughley New Street to Stowmarket Improvement Scheme.

Rail

3.1.2 Stowmarket rail station is situated on the London to Norwich mainline with direct connections to both as well as the intermediate stations.

3.1.3 There are 25 train services from Stowmarket to Ipswich and London (going into Liverpool Street) on a weekday (Monday to Friday). Services operate on average every 40 minutes to 1 hour. During peak hours, there is a half hourly service. The Saturday service operates at the same frequency as the weekday service (trains every 40 minutes to 1 hour). The Sunday service is hourly.

3.1.4 Between Stowmarket and Norwich, trains operate at 30 to 35 minute intervals until 09:00 and then switch to an hourly service (Monday to Friday). The weekend service operates at hourly intervals with the first train departing Stowmarket at 07:19 and 09:54 on Saturdays and Sundays.

3.1.5 There are 16 daily services operating hourly from Stowmarket to Cambridge (Monday to Saturday). On Sundays this is reduced to a service every two hours.

3.1.6 There are 8 daily services from Stowmarket to Peterborough (Monday to Saturday) and 6 on a Sunday. The service operates every two hours on all days.

Buses

3.1.7 AECOM's research has found 8 bus services which provide good or moderate access around Stowmarket. They are as follows:

- 87, 88,88A – This services runs from Ipswich – Stowmarket – Stowupland and stops at 8 locations within Stowmarket. Operating 5 days a week (Monday to Saturday) on average every 30 minutes. The 88 operates a separate school day service which goes from Needham market to Gainsborough.
- 87B, 88B – This is the complementary Sunday and Public Holiday service to those listed above. The same stops are served and service operates at hourly intervals.
- 430 – The 430 is a school day only service and only makes 4 stops within Stowmarket. It operates once in the morning and once in the afternoon.
- 462 – The 462 is a weekday operation calling at 4 stops within Stowmarket. This service only runs on Tuesdays, Thursdays and Fridays and overall frequency occurs at 2 hour intervals.

These services provide a basic connection to Ipswich, but do not provide reliable frequent bus links within the town.

Walking

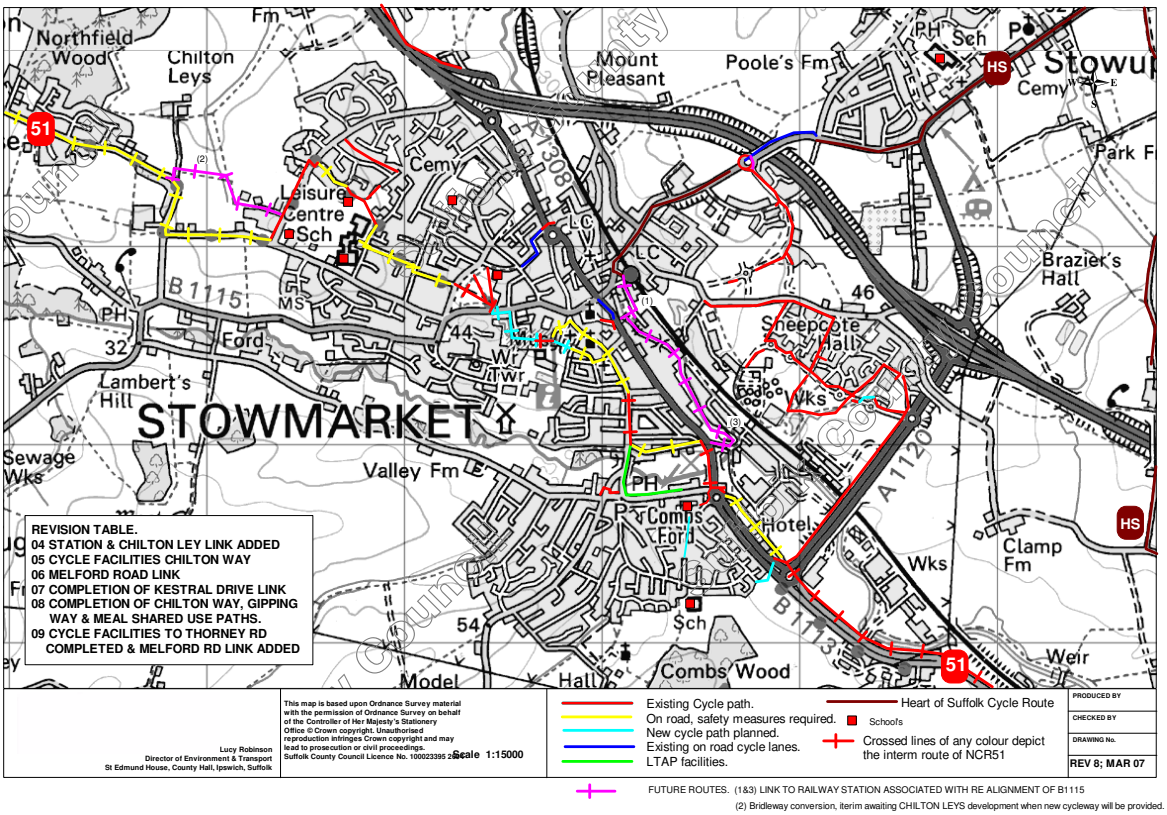
3.1.8 Stowmarket has a relatively good network of walk links, both along existing roads, and dedicated paths and crossings. Particular care has been taken with the layout of the Cedars Park development to provide convenient links to the town centre. With the completion of the Relief Road bridge more direct links to the railway station interchange will be provided.

Cycling

3.1.9 The National Cycle Route Network 51 runs east – west through Stowmarket, and will ultimately connect Colchester and Oxford. The route is signed and passes through Stowmarket on the stretch between Ipswich and Bury St Edmunds. Stowmarket also has a network of cycle routes

linking to the town centre and railway station, including routes linking through Cedars Park to Tesco's. These will be further enhanced as part of the Relief Road railway crossing.

Figure 2 Cycle routes in Stowmarket



3.2 Scenario Components and Horizons

3.2.1 The initial allocation of 1,400 dwellings originally considered for the period up to 2021 was nominally 1,000 greenfield, and 400 of these dwellings proposed to be constructed on brownfield land. For the purposes of this current analytical work, the Consultants' have used a total of 1,400 new swellings at a single site to the north west of the town. This is deemed to represent a robust and precautionary scenario in terms of residential land and transport requirements.

3.2.2 The RSS is currently being reviewed for a further 10 years to 2031, and the current AAP Proposed Submission considers a total of 2,000, subject to refinement and site by site consideration.

3.2.3 Reference to MSDC's longstanding commitment to the 'Luck Decision' has already been mentioned in the Introduction to this Report. This was taken 20 years ago and regarded a parcel of land to the west of Stowmarket which fronts onto Union Road. This site was refused planning permission. This refusal was supported by the Planning Inspector because it was felt that an additional 200 to 250 dwellings would give rise to an unacceptable impact on Stowmarket town centre as a result of traffic having to travel through the centre of town to travel towards Ipswich. There is similar concern over the impact on the Combs Ford area by traffic seeking to avoid the town centre.

3.2.4 MSDC has identified that the main committed development in the area for employment is at Cedars Park which would be made up of B1 and B8 land uses and total 11.8ha.

3.2.5 MSDC has also provided information regarding possible developments which may come forward. With the proposed shift from a three tier school system to a two tier school system, this may result in several former middle school sites becoming available, and it is likely that the Council would wish for these to be developed into residential sites. The existing Tesco store

close to the A14 junction has proposed a 30% increase in floorspace which would be in the form of a mezzanine level. However, so far this proposal has been refused planning permission.

3.3 Scenarios Examined

3.3.1 AECOM has examined eight scenarios with regards to the location of the assumed 1,400 dwellings allocated to Stowmarket. These are:

- 'Do Nothing' approach;
- 'Do Nothing' plus link road;
- 'Do Something' approach;
- 'Do Something' plus link road;
- Sustainable approach;
- Sustainable approach plus link road; and
- Sustainable approach throughout Stowmarket.

The scenario of the full sustainable approach throughout Stowmarket plus link road was not examined in detail, since the full sustainable approach is expected to avoid the need for the link road.

'Do Nothing' approach

3.3.2 This scenario would assume 1,400 dwellings allocated to the north and west of Stowmarket with employment largely to the east of town. No link road would be provided and all trips generated by the new developments would use the existing road network. There would be no significant improvements to public transport or the walking and cycling network.

'Do Nothing' approach plus link road

3.3.3 This scenario would be the same as the 'Do Nothing' scenario described above with the exception that a link road would be provided. This link road would either be a direct link to junction 49 of the A14 or a more circuitous link road through the new residential areas with the intention of discouraging use of the link road as a quick link to the A14 for traffic originating outside the town.

'Do Something' approach

3.3.4 The 'Do Something' approach would assume 1,400 dwellings to the north and west of Stowmarket, with employment mainly to the east of the town.

3.3.5 Some promotion of sustainable transport modes would be undertaken and some improvements would be provided to the current cycling, walking and bus networks to try to encourage the take up of these modes. For example, this would be likely to include improvements to the walking and cycling infrastructure within Stowmarket and between the allocation sites and key sites such as the rail station and the town centre. It could also include improvements to bus stops in the form of providing Real Time Information. However, no large scale improvements would be made and the bus route network itself would remain as it is.

'Do Something' approach plus link road

3.3.6 This approach would be the same as the 'Do Something' approach except that a link road would be provided. As with the 'Do Nothing' approach, this would either be in the form of a direct access to the A14 or a more circuitous link road through the allocation site.

Sustainable approach

3.3.7 The sustainable approach would assume 1,400 dwellings to the north and west of the town. Even though employment would be mainly to the east, some employment would also be provided as part of the residential areas so as to not create separate residential and employment areas thereby minimising the risk of a substantial increase in the number of vehicle generated trips on the road network.

3.3.8 Additionally, public transport, walking and cycling would be promoted and a frequent and regular bus network put in place to provide a link between the residential and employment areas and the town centre. This approach would build on the improvements mentioned under the 'Do Something' approach to ensure that a wide variety of sustainable mode measures were

promoted and in some cases introduced in order to influence modal shift away from the private car as much as possible. This could include measures such as new cycle ways and more frequent bus services.

3.3.9 The presence of a good public transport network and the promotion of cycling and walking mean that lower trip rates could be applied for residential developments under this scenario.

Sustainable approach plus link road

3.3.10 This scenario would be the same as that described in the 'sustainable approach' but with a link road provided. As before, this link road would either provide a direct link from the residential areas to the west to the A14 or act more as a circuitous route to the A14 to discourage people from using the link road as a quick connection to the A14.

Sustainable approach throughout Stowmarket

3.3.11 This scenario would be the same as that described in the 'sustainable approach' but with a town wide shift from car to more sustainable modes. With this scenario, extensive investment in encouraging a shift away from the car for suitable town trips will partially, but not completely, offset the increases from the new residential areas. This is expected to eliminate the necessity for the link road to the new A14 J49.

3.4 Suffolk County Council Local Transport Plan 2006-2011

3.4.1 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.

3.4.2 The objectives identified in the LTP which can be considered relevant to Stowmarket and therefore this assessment are:

- Improve public transport, walking and cycling, particularly in town centres;
- Work with the Highways Agency to better manage and target investment on the A14 and improve safety by reducing conflicts between passenger transport and freight;
- Minimise the impact of traffic and transport infrastructure (including air quality) 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.

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."

3.4.3 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.

3.4.4 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 congestions 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.

3.4.5 The LTP aims to reduce congestion within Suffolk. Stowmarket is identified as a congestion hot spot in Suffolk and therefore to address this, 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.
- **Improved rail passenger and freight services** – no direct mention is made of improvements to passenger rail services which would benefit Stowmarket.

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

- **Availability and cost of car parking** – the main feature which would be relevant to Stowmarket, would be the 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,

3.4.7 Even though the LTP does not directly mention proposals for Stowmarket which would promote sustainability, its approach to the whole county indicates that sustainability is high on SCC's agenda and that Stowmarket too should benefit from this. Of particular relevance to Stowmarket would be the proposed improvements to the bus network and a better provision of services. For Stowmarket, this could be in the form of improvements to existing bus stops through the provision of real time information, and improved interchange between bus and rail. Walking and cycling would also be promoted through improving existing facilities and ensuring that new walking and cycling routes are provided between key services and residential and employment areas.

3.4.8 The LTP identifies Stowmarket as market town which suffers from traffic congestion due to its strategic location in the county. As a result, the LTP proposes to enhance walking and cycling facilities in market towns to encourage more sustainable short journeys. The B1115 Stowmarket Relief Road is identified as a major scheme for the county.

3.4.9 The LTP is now reaching the end of its period, and LTP3 (2012 to 2017) is beginning to be formulated. While some of the 2006 to 2011 Plan have been successfully developed (notably the Stowmarket Relief Road) progress elsewhere has been steady but slow. Going forward, it is expected that the policies will change emphasis to support wider County objectives, and that purely public budgets will be reduced. There will be an increasing emphasis on private

developer funding for all aspects of community facilities, with mechanisms for enabling delivery early in the development process.

3.5 Stowmarket Local Transport Action Plan (2002)

3.5.1 The Stowmarket Local Transport Action Plan (SLTAP) is now rather old, but still remains largely valid. It brings together national, regional and local issues which affect transport, as well as the results of local community involvement and the needs of pedestrians and cyclists. Overall, it provides a vision for Stowmarket which should be achievable through a range of sustainable transport solutions.

3.5.2 Following community involvement, the issues that arose are:

- Pedestrian and vehicle conflict in the town centre;
- Lack of continuous pedestrian links to the schools;
- Lack of continuous pedestrian links between the residential areas and the town centre;
- Lack of continuous cycle links between the residential areas and the middle and high schools;
- Lack of continuous cycle links between the residential areas and the town centre / leisure centre / railway station;
- Insufficient buses to adjacent towns, villages and within the town, except Superoute 88;
- Lack of integration between buses and trains;
- Speed and volume of traffic in residential areas;
- Speed and volume of traffic near to schools;
- Congestion in Gipping Way, Station Road (east and west) and Tavern Street;
- Delays at B1115 Stowupland Road level crossing; and
- Lack of disabled parking facilities, limited waiting parking and short-term parking in the town.

3.5.3 This led to the development of a vision for Stowmarket, which states that “Stowmarket is an important district centre, which will be provided with sustainable transport choices to improve the quality of life and enhance viability and vitality of the town.”

3.5.4 Several objectives have been put forward. Those which are considered relevant to this assessment are:

- To provide a transport network that meets the needs of Stowmarket and which encourages walking, cycling and public transport;
- To provide safe and continuous pedestrian and cycle facilities between the main housing areas and the town centre, leisure facilities, railway station, major employment centres and schools, and also between Stowmarket and surrounding communities, for example Combs, Onehouse and Stowupland;
- To provide safe and secure cycle parking within the town centre and at leisure facilities, major employment centres, railway station and schools;
- To reduce traffic congestion particularly in sensitive locations;
- To provide appropriate transport routes for traffic;
- To improve accessibility, frequency and reliability of bus services in and around Stowmarket;
- To promote interchange facilities for bus and rail passengers; and
- To promote greater awareness of transport issues.

3.5.5 The SLTAP then proposes several solutions over a three part timescale:

- Short term – to be implemented as soon as possible;
- Medium term – to be implemented within the 5 year period of 2004 to 2009; and
- Long term – to be implemented within the 14 year period of the Structure Plan.

3.6 Stowmarket Area Action Plan: Infrastructure Delivery Programme

3.6.1 The Infrastructure Delivery Programme (IDP) forms chapter 6 of the Stowmarket AAP ‘Sites’ document, and has been further refined and detailed in Appendix A of the Proposed

Submission, partly as a result of the analyses described in this Report. The IDP covers a range of community facilities, and is structured across three Periods: 2010 to 2015, 2016 to 2020, and from 2021. For transport facilities, the emerging residential land allocations have been compared with the existing transport problems and policies, and six groups of transport improvements examined by the MSDC:

- Bus service improvements, focussed on establishing a viable and attractive bus service within the town (£1.347M)
- Cycling enhancements – town centre, completing and improving a network of town cycle routes providing much improved cycle access to the town centre (£2.026M)
- Cycling enhancements- villages, safety and enabling measures to make cycling from outlying areas more attractive (£0.130M)
- Footpath enhancements – improvements to the existing footpaths, principally the River Gipping footpath, and the links between the town centre and the railway station (£1.025M)
- The link road connection to the A14 J49 (£1.0M)

The IDP represents a useful start at identifying a 'bottom-up' programme of works, to provide context for assessing individual developments. Some of the costings are thought to be possibly on the low side. It will be subject to change as individual developments are brought forward. The simple total of the transport related items identified is £5.528M. Including local site specific existing network improvements and mitigations this could suggest a total programme of, say, £8M for the 2,000 new homes being planned, that is about £4,000 per new dwelling.

3.7 At the end of the next Chapter, the Consultants reach a judgement as to which of the scenario levels of sustainability is achievable with this level of investment in encouraging non car travel.

4 Traffic Impacts Assessment

4 Traffic Impacts Assessment

4.1 Approach

4.1.1 AECOM has assessed the likely impact of the seven scenarios detailed in Chapter 3 of this report for both the residential and employment sites. This has been done using Census 2001 data, the TRICS 2008b database, and the National Travel Survey.

Residential

4.1.2 AECOM has used the 2001 Census data, National Travel Survey and TRICS database in order to estimate the potential person trip generation of the proposed housing allocation and to determine the likely distribution.

4.1.3 In order to determine a trip rate and distribution for each of the allocated sites, AECOM has utilised data from the 2001 Census, including the Journey to Work by mode profile.

4.1.4 Stowmarket is covered by three Census wards: Stowmarket Central; Stowmarket South; and Stowmarket North (see Figure 2). The car borne trip rates as calculated from the 2001 Census are shown in Table 7 for each of the three wards. These can be considered individual to the ward.

Figure 2 – Census Ward Boundaries for Stowmarket

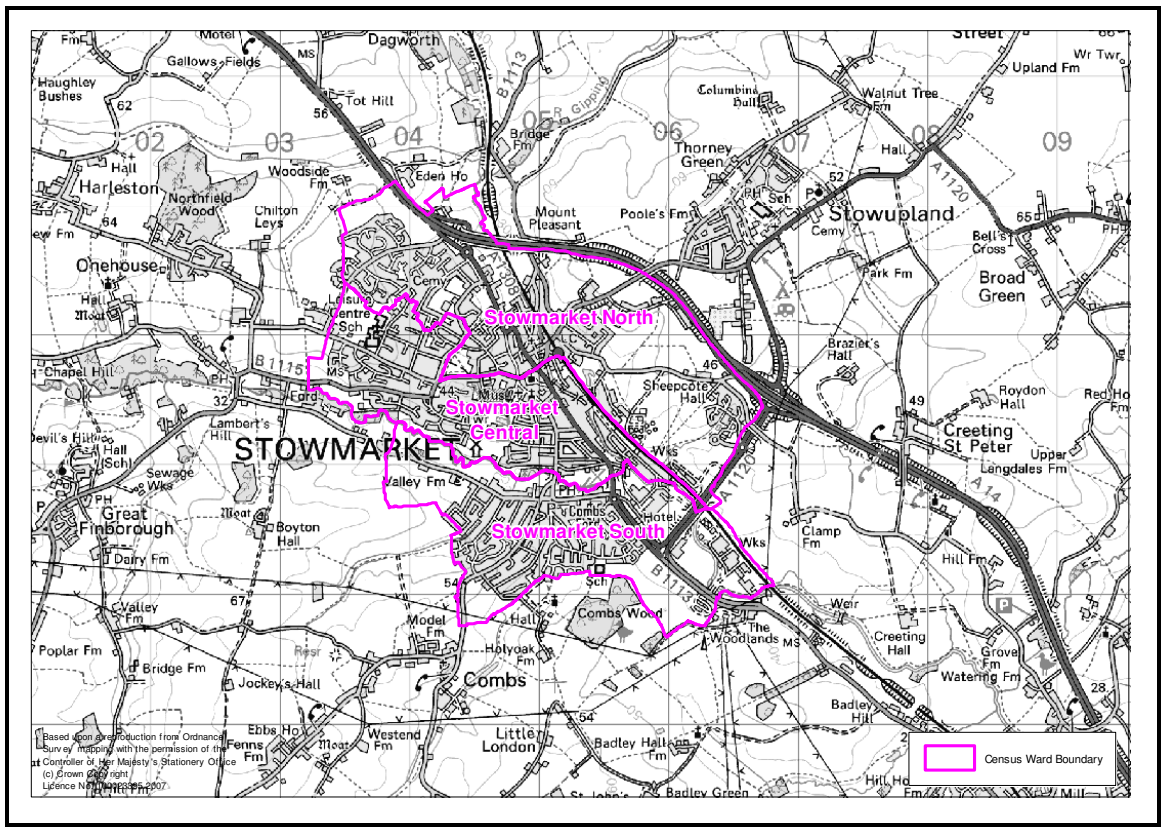


Table 7 – Car Mode Residential Trip Rates per Ward

	Ward					
	Central		North		South	
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures
AM	0.10	0.37	0.12	0.45	0.12	0.46
PM	0.28	0.18	0.34	0.21	0.34	0.22

4.1.5 Appendix A of this report details the methodology used to determine the trip rate / generation.

4.1.6 AECOM has used Stowmarket North ward to represent the characteristics of the potential residential site under the 'Do Nothing' case as this ward contains the current western most residential areas of Stowmarket. Therefore it is likely to have modal split, trip rate and distribution patterns similar to the new residential site.

4.1.7 Table 8 shows the number of motor vehicle trips that would be generated (arrivals and departures) by 1,400 dwellings based on the Stowmarket North trip rates during the morning and evening peak hours.

Table 8 – 'Do Nothing' Residential Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	170	635	805
17:00 – 18:00	474	299	774

4.1.8 For the 'Do Something' approach, a 7% reduction has been applied in terms of the number of trips generated when compared to the 'Do Nothing' scenario. This reflects the difference in car driver mode share between the North and Central wards of Stowmarket. As this reduction is only based on car driver mode share difference it provides a more conservative view, and therefore would be a good percentage reduction to use when applying a 'Do Something' scenario rather than a full sustainable approach.

4.1.9 Table 9 shows the number of motor vehicle trips that would be generated (arrivals and departures) by 1,400 dwellings based on a 7% reduction on the Stowmarket North trip rates during the morning and evening peak hours.

Table 9 – 'Do Something' Residential Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	158	591	749
17:00 – 18:00	441	278	719

4.1.10 For the sustainable approach, the trip rates of Stowmarket Central ward have been used. These are around 17% lower than for the other two Stowmarket wards because the central area is generally more accessible and contains employment destinations. Therefore, the provision and promotion of sustainable transport is likely to lead to lower trip rates potentially similar to those of Stowmarket Central ward. Consequently, a 17% reduction in trip generation has been used in the sustainable approach.

4.1.11 Table 10 shows the number of motor vehicle trips that would be generated (arrivals and departures) by 1,400 dwellings based on a 17% reduction on the Stowmarket North trip rates during the morning and evening peak hours.

Table 10 – 'Sustainable' Residential Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	139	519	658
17:00 – 18:00	389	245	634

4.1.12 The vehicle trip generation for the residential site has been assigned to the local road highway network in accordance with the 2001 Census journey to work data for Stowmarket North ward. This data provides the destinations of places of work for existing residents within the ward in 2001. The trip distribution has been calculated by grouping destinations by specific routes through the study area.

4.1.13 It is acknowledged that using the 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 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.

4.1.14 The Census data allowed a simple trip distribution to be formulated based on the destination wards of car driving residents of Stowmarket North ward. Destinations were grouped into five broad groups as follows:

- Trips to the north – A1120, Stowupland area and beyond: 7%;
- Trips to the east – Ipswich area: 27%;
- Trips to the south – B1115 corridor and Hadleigh area: 4%;
- Trips to the west – Bury St Edmunds area: 24%; and
- Trips to Stowmarket itself: 39%.

4.1.15 Appendix B1 to B6 show the number of trips generated to each of the five main areas listed above from the residential area in Stowmarket during the morning and evening peak periods (arrivals and departures). (It should be noted that the base mapping used in the figures does not show the new junction 49 of the A14, located adjacent to the assumed residential area north west of Stowmarket).

Employment

4.1.16 MSDC has provided AECOM with information regarding three possible employment scenarios. These are:

- Short term (next 5 - 10 years);
- Long term – steady growth (next 20 years); and
- Long term – high growth (next 20 years fuelled by growth at Felixstowe port). This assumes additional employment in Stowmarket as a result.

4.1.17 MSDC has also identified three broad employment directions within Stowmarket. These are:

- Tesco area (east of Stowmarket);
- Chilton Leys (north west of Stowmarket near new junction 49 of the A14); and
- Town centre

4.1.18 For each scenario, for each broad employment direction, MSDC has provided some indication as to the number of jobs that would be generated by the employment. This is shown in Table 11. These figures are aspirational at this stage, and are highly dependent on commercial interest.

Table 11 – Potential Increase in Employment under Three Growth Scenarios

	Short term (5-10 years)	Long term – steady growth	Long term – high growth
Tesco area (east)	11.8ha = approx 800 jobs (B1/B8)	1,250 jobs (B1/B2/B8) 200 jobs (non B uses, ancillary facilities, e.g. leisure and doctors' surgeries)	2,500 jobs (B1/B2/B8) 300 jobs (non B uses, ancillary facilities, e.g. leisure and doctors' surgeries)
Chilton Leys area (north west)	Nothing	600 jobs (B1/B2/B8)	1,000 jobs (B1/B2/B8)
Town centre	15% increase	23% increase	35% increase

4.1.19 AECOM has used TRICS 2008b to derive employment trip rates based on TRICS person trips. Tables 12 to 14 show average person trip rates per employee for B1, B2 and B8 land uses. These trip rates are based on multimodal studies available in TRICS within England and outside of Greater London.

Table 12 – B1 (Offices, R&D, Light Industry) Average Person Trip Rates per Employee

	Arrivals	Departures	Two-Way
08:00 – 09:00	0.379	0.032	0.411
17:00 – 18:00	0.034	0.309	0.343

Table 13 – B2 (General industry and manufacturing) Average Person Trip Rates per Employee

	Arrivals	Departures	Two-Way
08:00 – 09:00	0.147	0.037	0.184
17:00 – 18:00	0.024	0.126	0.150

Table 14 – B8 (Warehousing and distribution) Average Person Trip Rates per Employee

	Arrivals	Departures	Two-Way
08:00 – 09:00	0.165	0.042	0.207
17:00 – 18:00	0.059	0.197	0.256

4.1.20 It should be noted that the trip rates used are generic and should not be used to support any one particular site or development as they are not tailored to a specific area. B1 use involves the highest, and most tidal, rates of travel.

4.1.21 To assume a precautionary situation, AECOM has taken the 2,500 jobs proposed under the high growth scenario to the east of Stowmarket and calculated the number of trips that these jobs would generate. It is however acknowledged that some employment growth would also take place to the west of the town in the Chilton Leys area, and in the town centre. This would help increase the internalisation of trips within Stowmarket when coupled with the potential growth in the number of residential dwellings within the town.

4.1.22 As it is not known what proportion of B1, B2 and B8 land uses would feature on the employment sites, AECOM has divided the 2,500 jobs equally between all three land uses, resulting in 833 jobs per land use.

4.1.23 Applying the trip rates obtained from TRICS and shown in Tables 15 to 18, AECOM has been able to determine an approximate number of trips that would be generated in the morning and evening peaks (arrivals and departures) from the three different employment landuses. It has been assumed that one job equates to one employee for simplicity.

4.1.24 The car driver mode share of 61% for Stowmarket South ward has been applied to the person trip generation to obtain vehicle trip generation.

Table 15 – B1 (Offices, R&D, Light Industry) Land Use Vehicle Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	193	16	209
17:00 – 18:00	17	157	174

Table 16 – B2 (General industry and manufacturing) Land Use Vehicle Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	74	19	93
17:00 – 18:00	12	64	76

Table 17 – B8 (Warehousing and distribution) Land Use Vehicle Trip Generation

	Arrivals	Departures	Two-Way
08:00 – 09:00	84	21	105
17:00 – 18:00	30	100	130

Table 18 – Total Employment Vehicle Trip Generation (B1, B2 and B8 Land Uses)

	Arrivals	Departures	Two-Way
08:00 – 09:00	351	56	407
17:00 – 18:00	59	321	380

4.1.25 Census 2001 travel to work data was used to obtain the origin wards of people working in Stowmarket South ward. Stowmarket South ward was used to represent the employment allocation because it covers the majority of the area in which the employment allocation would be located.

4.1.26 The Census data allowed a simple trip distribution to be formulated based on the origin wards of workers (car drivers) employed in Stowmarket South ward. The distribution resulted in the following:

- Trips from the north – A1120, Stowupland area and beyond: 8%;
- Trips from the east – Ipswich area: 18%;
- Trips from the south – B1115 and Hadleigh area: 6%;
- Trips from the west – Bury St Edmunds area: 14%; and
- Trips from Stowmarket itself: 54%.

4.1.27 That is, about half the employment in Stowmarket South comes from outside Stowmarket, and half from the three wards within Stowmarket.

4.1.28 MSDC aims to increase trips within Mid Suffolk rather than encouraging travel to Ipswich, Bury St Edmunds, and beyond. No assessment of this has been made at this stage.

4.1.29 Appendix B7 and B8 show the number of trips generated by each of the five main areas listed above into Stowmarket for the morning and evening peak periods. It should be noted that the base mapping used in the figures does not show the new junction 49 of the A14, which is now located adjacent to the approximate residential area west of Stowmarket.

4.2 Analysis

4.2.1 The impact of the residential and employment sites has been assessed under the seven scenarios outlined earlier.

'Do Nothing' approach

4.2.2 The trip rates used (see Tables 12 to 14) could be assumed to be representative of a situation whereby the sites were allocated and public transport provision and facilities for pedestrian and cyclists remain at a level no better than exist at present - a 'Do Nothing' scenario. For the allocation sites, the trip rate for Stowmarket North ward has been used to represent the likely trip making characteristics of the allocation site in the 'Do Nothing' scenario.

4.2.3 The result of this scenario would be one where each dwelling or sqm of development would result in an increase in car borne trips over and above the existing along the same distribution routes.

4.2.4 The results of this scenario are shown in Table 19. The table represents all 6,404 dwellings currently in the three Stowmarket Census wards (as at 2001) then adds in the additional 1,400 new dwellings.

Table 19 – Results of 'Do Nothing' Approach

TOTAL (Stowmarket Central, North & South = 6,404 dwellings)		
	Arrivals	**Departures**
AM 'Do Nothing' Total	737	2,750
PM 'Do Nothing' Total	2,056	1,296
TOTAL (Stowmarket Central, North & South = 6,404 dwellings) Plus 1,400 Dwellings Allocation		
AM 'Do Nothing' Total + Allocation Site 'Do Nothing' Trip Generation	907	3,385
AM 'Do Nothing' Total Without Allocation	737	2,750
AM Difference	170	635
% Increase	23.1%	23.1%
PM 'Do Nothing' Total + Allocation Site 'Do Nothing' Trip Generation	2,530	1,595
PM 'Do Nothing' Total Without Allocation	2,056	1,296
PM Difference	474	299
% Increase	23.1%	23.1%

Notes: 'Do Nothing' trip rates are those at present for Stowmarket North ward

4.2.5 From Table 19 it can be seen that using this methodology results in 1,400 dwellings increasing existing overall car borne trips by of 23.1%. This level of increase will clearly have an adverse impact on the road network level of service at critical junctions.

4.2.6 Based on the distribution calculated from the 2001 Census for resident car drivers in Stowmarket North ward, Appendix B1 and B2 details the distribution of the increased trips. It can be seen that the residential site could generate 152 trips during the morning peak which would use the A14 in the direction of Bury St Edmunds, and 171 trips also on the A14 but in the direction of Ipswich. This is likely to impact substantially on the Trunk Road network. Added to this, 248 trips are shown to be generated which would travel into the central Stowmarket area and therefore could result in additional issues at the key congestion points within the town.

4.2.7 The employment sites could attract 112 trips during the AM peak from destinations which are likely to use the A14 to travel to Stowmarket. This is unlikely to have a significant impact on the Trunk Road network. However, 190 trips are shown to originate in the central Stowmarket area towards the employment area to the east of the town. This could have a detrimental impact on the already congested junctions within the town centre. However, it should be noted that it is not known what the traffic flows are to the east and west of the town centre.

4.2.8 It should be noted that AECOM has not taken into account trips that may be generated by the residential site which have as their destination the employment site to the east of Stowmarket. This will therefore result in double counting of some trips. However, it does represent a precautionary situation.

'Do Nothing' approach plus link road

4.2.9 The 'Do Nothing' approach including a link road would generate the same number of trips as the 'Do Nothing' approach. The direct link road is unlikely to have an effect on the modes used by residents of the new dwellings, although it is unlikely to encourage use of public transport. However easy access to the A14 for Ipswich bound trips is likely to reduce some of the burden on the town centre routes by removing both existing and allocation site trips from the local road network. The allocation site would generate some 171 trips towards Ipswich and 152 trips towards Bury St Edmunds in the morning peak period. If a tortuous link road is provided, it is likely that only trips generated by the allocation sites would use it to access the Trunk Road. Trips generated elsewhere within the wider Stowmarket area are still likely to use routes through the town centre, instead of the link road.

4.2.10 The Census data identifies that 123 of existing residents of Stowmarket North ward work in Stowmarket South ward, and of these 80 travel to work by car (65%). Stowmarket South ward has been used to represent employment destinations because this is where the majority of employment is located and where the proposed employment allocation site could be sited. The provision of a link road with easy access to the A14 could therefore result in up to 80 existing trips (one-way) being made between junctions 49 and 50 via the A14 instead of via the town centre. This would be in addition to any new trips generated that could also junction hop on the A14 instead of travelling through the town centre. This could therefore potentially have a significant impact on the A14 Trunk Road and is likely to be of concern to the Highways Agency. Whilst this may occur, it should be noted that the impact or likelihood of this occurring cannot be quantified at this stage because it depends upon individual drivers' route choices. However it should be taken as an indication of the potential scale of impact of a link road and should be taken into consideration by MSDC when deciding which approach to adopt.

4.2.11 Under the 'Do Nothing' approach, the employment areas will not generate any more or less vehicular trips due to the link road. However, as with the residential areas, people may use the A14 to junction hop between the residential areas to the east of the town and the employment areas to the west which would place added pressure on the A14.

'Do Something' approach

4.2.12 The number of trips generated under the 'Do Something' approach is 7% lower than those under the 'Do Nothing' approach. This takes into account the fact that some sustainable measures will have been provided (namely focussing on walking and cycling), but that these will have been minimal and no improvements would have been made to the existing public transport network.

4.2.13 Table 20 outlines the existing mode share for each of the three Wards in Stowmarket (Central, North and South) and forms the basis for defining the 'Do Something' lower trip rates.

Table 20 – Mode of Transport Adopted for Journey to Work Trips (%) based on 2001 Census

Mode	Central	North	South
Train	2.15%	2.77%	1.25%
Bus	3.27%	3.73%	4.88%
Taxi	0.00%	0.21%	0.38%
Car Driver	57.00%	61.21%	60.88%
Car Passenger	5.06%	6.15%	6.42%
Motorcycle	1.53%	0.83%	1.42%
Bicycle	8.38%	5.35%	8.63%
On Foot	15.08%	11.88%	9.83%
Other	0.00%	0.31%	0.00%
Work From Home	7.52%	7.56%	6.33%
TOTAL	100%	100%	100%

4.2.14 A review of the existing mode share for Stowmarket Central, North and South wards reveals that in Central ward, the car mode share is lowest and cycling and walking are highest. This is likely to be due to a number of factors, most notably that dwellings located in Central ward are closer to places of work and key facilities such as the rail station and town centre. This allows walking and cycling trips to be made more easily. It is however acknowledged that there are other social factors and that accessibility to these key destinations is not solely responsible for the reduced car mode share.

4.2.15 Table 21 shows the results of this scenario when compared with the 'Do Nothing' scenario. It highlights that the 'Do Something' approach would still result in an increase of 21% in existing overall car borne trips. These increases in traffic when distributed across the network are likely to have an adverse impact on the existing road network.

4.2.16 The distribution of the additional trips generated under the 'Do Something' scenario is shown in Appendix B2 and B3. These show that the residential site could generate 142 trips during the morning peak which would use the A14 towards Bury St Edmunds and 170 trips which would use the A14 towards Ipswich. 230 trips would be generated from the residential site towards central Stowmarket.

4.2.17 It should be noted that the 7% reduction in the number of trips generated has been applied across the board when in reality trips to the town centre are likely to decrease by more than 7% and those to destinations further afield unlikely to decrease significantly. This is because the 'Do Something' approach assumes improvements to, and promotion of mainly walking and cycling, and some improvements to existing bus stops. These modes are most likely to be used to access the town centre. However, there is the possibility of increasing the number of people walking or cycling to the rail station and using the train for longer distance journeys instead of using the car. This in reality is likely to be minimal because the improvements to the walking and cycling network are not in conjunction with improvements to the rail service (in terms of frequency).

4.2.18 A 'Do Something' approach has not been calculated for employment trips but should go some way to reducing the number of trips generated that would use the road network. This is likely to be limited to trips with origins within Stowmarket itself.

Table 21 – Results of 'Do Something' Approach

TOTAL (Stowmarket Central, North & South = 6,404 dwellings)		
	Arrivals	**Departures**
AM 'Do Nothing' Total	737	2,750
PM 'Do Nothing' Total	2,056	1,296
TOTAL (Stowmarket Central, North & South = 6,404 dwellings) Plus 1,400 Dwellings Allocation		
AM 'Do Nothing' Total + Allocation Site 'Do Something' Trip Generation	895	3,341
AM 'Do Nothing' Total Without Allocation	737	2,750
AM Difference	158	591
% Increase	21.5%	21.5%
PM 'Do Nothing' Total + Allocation Site 'Do Something' Trip Generation	2,497	1,574
PM 'Do Nothing' Total Without Allocation	2,056	1,296
PM Difference	441	278
% Increase	21.4%	21.5%

'Do Something' approach plus link road

4.2.19 The 'Do Something' approach plus link road would generate the same number of trips as the 'Do Something' approach. The only difference would be the provision of a link road. If a direct link from the west of the town to junction 49 of the A14 was provided, this would remove the need to travel through the town centre to access the A14.

4.2.20 If a direct link road is provided this could have the detrimental effect of encouraging travel by private car because of its convenience, thereby effectively removing any benefits associated with the improved measures to encourage sustainable travel. As the 'Do Something' approach focuses on walking and cycling, a direct link road is likely to overcome any sustainable incentives offered.

4.2.21 However, if a more circuitous link road is put in place, this would probably only appeal to residents of the new allocation site and those that need to access the Trunk Road. Any trips to Stowmarket itself may be easier made by foot or on bicycle, and therefore, it is likely that the sustainable measures may have some effect in reducing the number of trips generated onto the Trunk Road network.

Sustainable approach

4.2.22 The sustainable approach assumes a full programme of measures to encourage and promote the use of public transport, cycling and walking.

4.2.23 MSDC details in section six of the Stowmarket AAP that following the direction offered by the Council's Core Strategy, the AAP needs to provide a clear statement of the infrastructure required to ensure that the aims of the plan are achieved.

4.2.24 MSDC identifies some potential infrastructure measures in the Stowmarket Infrastructure Delivery Programme (IDP) that could be provided or supported as part of the allocation of the proposed sites. These include such measures as improved bus services, cycle route and footpath enhancements.

4.2.25 Research has shown that there is potential to achieve substantial reductions in motor vehicle traffic through the use of Smarter Travel initiatives. Such initiatives include the deployment of measures such as:

- Workplace and school travel plans;
- Personalised travel planning;
- Travel awareness campaigns;
- Public transport information and marketing;
- Car clubs and car sharing schemes; and
- Teleworking, teleconferencing and home shopping.

4.2.26 Government research, summarised in the DfT document 'Smarter Choices – Changing the way we travel' (DfT), suggests that the intensive use of such measures could result in reductions in peak period urban traffic flows of up to 21% in the 'high intensity' scenario.

4.2.27 Examining the components of this research, it is evident that reductions on this scale would require a holistic approach to sustainable transport over the whole of the journey and over the whole of the urban area. This would involve measures to address the attractiveness of non-car modes of travel at both the home end and the workplace end of a home-to-work trip, for example. Measures to address just one element of a journey – for example the workplace alone – would result in a lower impact.

4.2.28 AECOM believes that the town of Stowmarket is well placed to achieve such reductions in car mode share if an approach covering the whole urban area – new and existing residential areas and workplaces, schools and shops – is adopted. The application of such trip rate reductions to the existing urban area could then be used to create 'headroom' to accommodate traffic generated by new residential areas which come forward.

4.2.29 The potential for this approach in Stowmarket is borne out by the relative differential in car-borne trip making exhibited by the three census wards in Stowmarket. These are summarised in Tables 8 to 10. It can be seen that the residential areas nearest the town centre exhibit car borne trip rates which are around 17% lower than those seen in the Stowmarket North and South wards (see Table 10). This must reflect a number of factors, including household size and income, car ownership, as well as transport related factors such as proximity to bus and rail services and workplaces. However, it does give some indication of the potential to achieve reductions in levels of private car use if a 'high intensity' sustainable transport option is pursued.

4.2.30 In order to quantify the potential of this approach to the new neighbourhoods to the northwest and northeast of the town, AECOM has adopted a 'sustainable travel' option based on applying the trip rates from the Stowmarket Central census ward to the new neighbourhoods. This has then been compared with the 'business as usual' case based on existing 2001 Census data.

4.2.31 Table 22 compares the effect of 1,400 dwellings applying the sustainable approach and adding the number of trips generated to the number of trips generated by the current dwellings in Stowmarket. It should be noted that this table assumes that the current dwellings are generating trips under the 'Do Nothing' case.

Table 22 – Results of 'Sustainable' Approach

TOTAL (Stowmarket Central, North & South = 6,404 dwellings)		
	Arrivals	**Departures**
AM 'Do Nothing' Total	737	2,750
PM 'Do Nothing' Total	2,056	1,296
TOTAL (Stowmarket Central, North & South = 6,404 dwellings) Plus 1,400 Dwellings Allocation		
AM 'Do Nothing' Total + Allocation Site Sustainable Trip Generation	878	3,274
AM 'Do Nothing' Total Without Allocation	737	2,750
AM Difference	141	524
% Increase	16.1%	16.0%
PM 'Do Nothing' Total + Allocation Site Sustainable Trip Generation	2,449	1,544
PM 'Do Nothing' Total Without Allocation	2,056	1,296
PM Difference	393	248
% Increase	16.0%	16.1%

Notes: 'Do Nothing' trip rates are those at present for Stowmarket North ward

'Sustainable' approach plus link road

4.2.32 As with the sustainable approach described above, the percentage of residents travelling to work other than by the private car should increase if a sustainable approach is adopted. The provision of a direct link road is likely to reduce the effectiveness of sustainable measures as there will in essence be a very attractive reason for making the journey by private car. However the provision of the link road is likely to reduce remaining car borne trips that are heading towards Ipswich from using the town centre, thus increasing reliability and journey times for public transport.

4.2.33 The provision of a more tortuous link road is likely to be more beneficial in the context of a sustainable approach, as it will be more attractive to those trips that actually need to use the Trunk Road rather than any cross-town trips which may be quicker to make by public transport. A tortuous link road would also be unlikely to attract trips from the wider Stowmarket area and therefore these trips would continue to use the local road network within Stowmarket town centre. Again these assumptions would need to be quantified.

4.2.34 As with the sustainable approach, no specific work has been undertaken to look at the effect of a good level of public transport and the promotion of walking and cycling to the employment site. However, it is acknowledged that this is likely to positively impact on the number of car driver trips generated, although this would need to be confirmed.

4.2.35 It should be noted that AECOM has not taken into account double counting of trips that may be generated by the new residential developments which travel to the new employment sites. This would need to be addressed in any future modelling undertaken.

Applying the Sustainable Approach to a Wider Area

4.2.36 In order to develop this further, an exercise has been undertaken in which the lower trip rates were applied across the board to all existing households in the Stowmarket North and South census wards, so that they reduced to those which currently exist in the Central ward. This approach relies on any improvements to public transport being in place from the start throughout the town, and a concerted 'Smarter Choices' behavioural change campaign being undertaken, so as to influence travel behaviour from the beginning. The results of this methodology are shown in Table 23.

4.2.37 This is an approximate method, but AECOM believes that it can show, in overall terms, the potential to release capacity on the road network with the aim of accommodating the motor vehicle trips generated by new residential neighbourhoods (which are themselves planned on sustainable lines) without the construction of significant new highway capacity. In due course, more precision could be brought to this process through the deployment of a multi-mode traffic model.

4.2.38 From Table 23 it can be seen that the reduction in existing car borne trips using this methodology results in 1,400 allocation dwellings increasing existing overall car borne trips by a maximum of 5.7%. These increases in traffic when distributed across the network should result in little adverse impact on the existing road network. However, it should be noted that there may be a slight effect on the Combs Ford junction. Further work would need to be undertaken to identify the routes of this increase in traffic to confirm this. Based on the distribution calculated from the 2001 Census, Appendix B9 and B10 detail the distribution of the 'remaining' trips.

4.2.39 A sustainable approach has not been calculated for employment trips generated. However, should a bus network be implemented linking the residential and employment areas with Stowmarket town centre, this is likely to have a beneficial effect on reducing the number of trips generated by people travelling to and from the employment site by car.

4.2.40 With the town wide shift to sustainable travel, the traffic pressures on the town road junctions is eased considerably. Thus the J49 link road, while useful for the remaining longer distance movements, is unlikely to be essential to relieve the town centre junctions. Further study of the pattern and nature of possible town wide initiatives is required to detail this qualitative conclusion.

Table 23 – Results of Approach Comparing 'Do Nothing' and Town Wide Sustainable Approaches

TOTAL (Stowmarket Central, North & South = 6,404 dwellings)		
	Arrivals	**Departures**
AM 'Do Nothing' Total	737	2,750
AM Sustainable Total	636	2,373
AM Total Difference	-101	-377
PM Total 'Do Nothing'	2,056	1,296
PM Total Sustainable	1,780	1,125
PM Difference	-276	-171
TOTAL (Stowmarket Central, North & South = 6404 dwellings) Plus 1400 Dwellings Allocation		
AM Sustainable Total + Allocation Site Sustainable Trip Generation	775	2,892
AM 'Do Nothing' Total Without Allocation	737	2,750
AM Difference	38	142
% Increase	5.2%	5.2%
PM Sustainable Total + Allocation Site Sustainable Trip Generation	2,169	1,370
PM 'Do Nothing' Total Without Allocation	2,056	1,296
PM Difference	113	74
% Increase	5.5%	5.7%

Notes: 'Do nothing' trip rates are those at present (Stowmarket North)
Sustainable Total = Stowmarket Central Trip Rates

4.3 Potential Sustainable Transport Measures

4.3.1 AECOM has examined a range of potential sustainable transport measures which could be implemented in Stowmarket as part of the 'Do Something' or approaches to bring about a modal shift from the private car to more sustainable modes of transport.

4.3.2 The emerging Infrastructure Development Programme forming part of the AAP Proposed Submission provides a comprehensive starting point for establishing the opportunities, and their order of magnitude costs.

Rail

4.3.3 To encourage travel by rail, the following could be adopted:

- More frequent services between Stowmarket and Ipswich, London and Norwich;
- Better interchange at Stowmarket rail station between the train and bus; and
- Increased cycle parking provision.

In the short term, there is little prospect of the rail services themselves being improved. There is, however, considerable scope for improving all aspects of the rail station interchange and park and ride facilities with the completion of the Stowmarket Relief Road. The emerging

Infrastructure Delivery Programme contains several elements of transport infrastructure focussed on serving the rail interchange. The 'Station Quarter' is considered in SAAP Policy 9, which envisages further enhancements to the interchange area.

Bus

4.3.4 Stowmarket has a basic inter-urban bus service to Ipswich, and some other limited specialist services. There is a strong case for the introduction of a frequent and convenient service within the town, providing multi-purpose links between housing, employment, shopping and the rail station. Given the existing and likely future separation of land uses over distances of the order of 3km to 6km, a frequent and fast bus service is essential to reducing the current car dependence. The emerging IDP envisages such a service, including bus shelters, RTPI and ancillary improvements, as well as the initial costs of establishing the bus service itself.

Cycle

4.3.5 Cycling measures that could be provided to encourage people to cycle within Stowmarket are:

- Provision of segregated cycleways or shared use cycleway/footways;
- Provision of cycle parking (in a safe and lit location) at key locations within the town centre, and at employment destinations;
- Signed cycle routes between residential areas and the town centre, rail station, and key employment destinations

The emerging IDP contains a comprehensive programme of cycling enhancements, and the new developments are being planned taking into account the opportunities for cycleway network connections. The urban journey distances of 3km to 6km are well suited to cycle use. Cycle use is, however, starting from a relatively low base.

Walk

4.3.6 The main axis of Stowmarket for pedestrians is the River Gipping footpath, but it is relatively lightly used at present. The emerging IDP contains a proposal to improve the route, which will link to the Town Centre to rail way station corridor.

4.3.7 As with cycling, it will be a basic design brief requirement that new developments establish direct and convenient walk links to adjacent areas, and onwards to the town centre and interchanges.

Conclusions on Sustainable Transport Prospects

4.3.8 The existing development pattern in Stowmarket is of a scale and layout to favour much higher levels of sustainable travel than are shown at present. The walk and cycle links between Cedars Park, the Gipping Way employment opportunities and the town centre are relatively easy to improve. The emerging land use pattern with more residential development to the west of the town, and employment uses to the east, are less likely to appeal to active mode users.

4.3.9 A frequent fast urban bus service will be needed to provide an attractive alternative to short distance car trips.

4.3.10 As introduced in Chapter 3, the emerging IDP suggests an investment of some £4,000 per new dwelling as part of the LDF AAP. The Programme is currently broadly based, and spread throughout the Stowmarket urban area. It is considered sufficient to deliver the 'Do Something' scenario for the travel behaviour patterns of the new development, and to provide a small but useful contribution to reducing car use for short trips.

4.3.11 If the IDP was focussed and targeted in serving the main residential land locations, it is judged to be able to deliver the 'Sustainable' level of travel behaviour in the new development, but with only limited associated impacts elsewhere.

4.3.12 It is judged that to implement a full, town wide, shift to the suggested reduced short distance car use will require a higher level of investment, perhaps up to double that already included in the IDP, to include more physical facilities, and a full scale 'Smarter Choices' campaign to encourage residents to use them. Table 24 provides some further commentary on the overall interventions which could be required.

4.4 Judgements on Traffic Flow Results

4.4.1 The allocation of some 1,400 dwellings in Stowmarket, together with employment sites for up to 3,400 jobs has the potential to generate significant additional traffic movements in and around the town. AECOM's estimates of these additional traffic flows are summarised in Table 25 and illustrated in Appendix B1 to B8, for the seven scenarios tested.

'Do Nothing Scenario

4.4.2 In terms of the 'Do Nothing' case, which assumes the new development is brought in with no parallel initiatives for shifting travel to more sustainable patterns and modes, , this report identifies the potential for up to 800 residential and 400 employment related vehicular trips to be generated in the morning peak. Some 540 of these are likely to require access to the A14 Trunk Road, whilst 530 would originate or have destinations in the town.

4.4.3 220 vehicle trips are estimated to travel between new housing sites to the north west of the town and the A14 Trunk Road towards Ipswich, together with an estimated 70 between this area and the employment area to the south east of the town. Without the provision of a link road between these sites and the A14, it is likely that many of these would find routes through the town centre and/or through the Combs Ford area, to the detriment of traffic and environmental conditions in these areas.

4.4.4 The exact nature and location of these impacts is dependent upon the route choices of individual drivers, and would require a computer-based traffic model to analyse them. However, the figures in Table 25 can be used to provide an overview of the scale of impact considered likely.

4.4.5 Considering the 'Do Nothing' case with a link road to the A14 at Junction 49, our analysis suggests that up to 560 newly generated trips might be attracted to the link road in the morning peak, including some 80 or so trips between existing residential areas and employment sites.

4.4.6 This would reduce the impact of generated traffic on routes through the town centre and the Combs Ford area, probably to acceptable levels. It would also introduce a small element of 'junction hopping' along the A14 between Junctions 49 and 50. AECOM have estimated the potential for this as being in the region of 150 vehicle movements in the morning peak.

4.4.7 The results of this manual analysis confirms the 'Luck Decision' – in the absence of policy interventions, new development to the north west of Stowmarket should be associated with a link road connection to the A14, which would benefit the town travel conditions in general, and not have a significant net effect on the A14 flows.

'Do Something'

4.4.8 A 'Do Something' case, assuming the introduction of a range of interventions encouraging sustainable modes, could reduce the number of trips generated by 7% to reflect the incentives and improvements made to the walking and cycling network, and some enhancements to existing bus stops. These measures may have a slight effect on reducing the number of trips generated overall. In addition, the 7% has been been distributed equally over all trips generated and therefore it may be that changes to shorter car trips within Stowmarket itself could reduce by more than 7%. This level of trip reduction is not considered sufficient to alter the conclusion that a link road would be desirable for the full build out of the residential area.

'Sustainable travel scenario for the new developments'

4.4.9 An alternative 'sustainable' case has been considered, based upon reducing car-borne trip generations in the new residential areas by some 17%. This figure is based on the relative car-borne trip rates of the three Stowmarket census wards and is supported by DfT research on 'Smarter Choices'.

4.4.10 Applying the 'sustainable case' trip rates to the new residential areas results in a significant reduction in newly generated traffic, however, the trips wishing to access the A14 to/from Ipswich are still estimated as being 178 in the morning peak. Addition of a link road to the sustainable case would have the potential to undermine the sustainable measures. However, this risk could be minimised by adopting a low standard indirect link, designed to serve the limited new development area only.

'Comprehensive Stowmarket wide sustainable transport scenario'

4.4.11 A further test was undertaken to examine the potential benefits of applying the 'sustainable case' trip rates across the whole of Stowmarket, including existing residential areas in the north and south census wards. This envisages some form of Area-Wide Travel Plan (AWTP), which would aim to bring trip generations throughout the town down to 'Stowmarket Central' levels and thus to create 'headroom' on the network to accommodate traffic generated by new development.

4.4.12 The combined impact of 1,400 dwellings on the north west fringe of the town and applying this approach everywhere results in a much smaller net increase in flows – in the morning peak, some 90 additional car trips trips to and from A14 destinations and 70 to and from the town centre.

4.4.13 Arguably increases of this magnitude would be sufficiently low so as to allow the road network to accommodate them without a substantial increase in road space and AECOM suggest that it may be possible, in this scenario, to consider dispensing with the historic requirement for a link road between the new residential areas and the A14 at Junction 49.

4.4.14 In summary:

- The A14 J49 link road performs a useful function under all scenarios where it has been tested, allowing access to the A14 both eastbound and westbound;
- The link road potentially helps to relieve the Gipping Way / Station Road junction;
- The link road does not result in significant 'junction hopping'; and
- The achievement of reduced car use in the new developments makes a significant and useful contribution to reducing the impact of the new developments; and
- Only with town wide concerted initiatives to reduce within town car trips will the overall increases in traffic be reduced to a level where the link road can be reconsidered.

Table 24 - Potential Sustainable Transport Interventions

Intervention	Impact	Mitigation and complementary measures	Outcome
Rail service improvements	More passenger interchange at rail station, less car traffic on the A14	Improve bus and active mode access to the rail station	Maintains the full range of employment accessibility while reducing the amount of long distance car commuting
Relief Road bridge	Better access to rail station interchange by all modes	Improve the bus interchange and forecourt layout	Opportunities for public realm and active mode facilities improvements near the railway station, with possible more attractive park and ride opportunities
Urban bus network improvements – shuttle services and RTPI	Establish bus as a real choice for intra town movements	Need to fund service, organise bus priority at Station Road / Gipping Way, design route to include the town centre, ASDA, and Tesco, analyse the residential areas and schools to be served, design bus stops to have information displays. Arrange bus / bus interchange at the railway station interchange.	Bus can replace car trips through the Gipping Way / Station Road junction
Further walk/ cycle network links and enhancements	Establish active modes as a real choice for short distance trips	Need for a holistic programme of, bike parking, travel planning, and wayfinding.	Active modes can generally replace car traffic on all roads in the town.
Locate jobs near homes, or homes near jobs	Increase the number of short distance trips	Need to revisit the possible employment uses to the east. Need to explore possible embedded workplaces, and Cedars Park / Gipping valley employment links	Current land use plan does not encourage shorter home to work distances.

Table 25 – Summary of Traffic Flows in Different Scenarios

	'Do Nothing' Case		'Do Nothing' With Link Road		'Do Something'		'Do Something' with Link Road		'Sustainable Case'		'Sustainable Case' With Link Road		'Area-Wide Sustainable Case' (*)	
	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak	AM peak	PM peak
Residential allocations:														
Total vehicle trips generated	805	774	805	774	749	719	749	719	665	641	665	641	182	190
Vehicle trips to/ from														
A14 Bury St Edmunds	193	186	193	186	180	173	180	173	158	152	158	152	43	45
A14 Ipswich	216	209	216	209	203	194	203	194	178	171	178	171	48	51
Stowmarket	314	302	314	302	292	280	292	280	256	108	256	108	70	73
Potential usage of Link Road	--	--	560	546	--	--	523	507	--	--	460	447	--	--
Potential relief to Town Centre from link road	--	--	367	359	--	--	343	334	--	--	302	295	--	--
Potential for Junction hopping A14 J49-J50	--	--	151	151	--	--	140	140	--	--	124	124	--	--
Employment Allocations:														
Total vehicle trips generated	407	380	407	380	--	--	--	--	--	--	--	--	--	--
Vehicle trips to/ from														
A14 Bury St Edmunds	55	53	55	53	--	--	--	--	--	--	--	--	--	--
A14 Ipswich	73	69	73	69	--	--		--	--	--	--	--	--	--
Stowmarket	220	205	220	205	--	--	--	--	--	--	--	--	--	--

Note: these are two-way peak hourly flows based on the assumptions contained in the report.
(*) – net increase in flows allowing for newly generated trips and reductions to existing trip-making due to town-wide sustainable measures

5 Caveats and Conclusions

5 Caveats and Conclusions

5.1 Caveats and the need for further work

5.1.1 These judgements are based on a simple manual assignment, assuming a single broad residential land allocation. The analysis, however, confirms earlier judgements, and emphasises the necessity for concerted and comprehensive early action to implement improvements to the bus, walk, and cycle facilities to support a campaign to initiate behavioural change.

5.1.2 Further work would have to be undertaken in order to quantify more precisely the detailed implications of this. The development and monitoring of the Infrastructure Delivery Programme will be needed to provide the mechanism needed to deliver the infrastructure and services to achieve this fundamental shift. Further work would be required to identify, cost, and value interventions. Further analyses could include:

- Applying the decreases in car mode share to destinations that could reasonably be reached by alternative modes and recalculating a more precise reduction in traffic flows;
- Matching trips generated by new residential areas to those attracted by new employment areas (internalisation);
- Considering the potential to maximise such internalisation by providing employment within predominantly residential areas as well as in employment areas;
- Gaining a better understanding of route choices based on the relative attraction to car drivers of a longer (but less congested) route via the A14 and a more direct (but slower) route through the town;
- Calculating the resulting increases in traffic at the individual key junctions listed in paragraph 1.10 and assessing their impact on junction capacity.

Ideally, these analyses should be informed by town wide transport modelling.

5.1.3 While individual site transport assessments may adjust the details and patterns of travel change, the main judgements are expected to stand.

5.2 Conclusions on the questions posed

5.2.1 Four questions were posed at the start of the study:

1. *How can new development be brought forward in accordance with the Core Strategy in such a way as to avoid A14 'junction hopping' (on the one hand) and excessive traffic through the Town Centre and Combs Ford areas (on the other)?;*

It is considered that the A14 J49 link road will not cause significant 'junction hopping' and that it would have a beneficial impact both on the town centre by providing A14 accesses to both the west as well as the east of the town. The link road is considered useful with both current and current policy led initiatives towards sustainable travel patterns. It is unclear how markedly more sustainable travel habits can be ensured in new residential developments without firmer prior funding arrangements.

2. *What is the potential for internalisation of trips (within the town) and reductions in car mode share?;*

Given the current and future planned separation of residential and employment areas, there is a definite, but finite, potential for further internalisation of commuting peak hour trips. Encouraging the development of employment opportunities to the south of Cedars Park would provide opportunities for working nearer home. Other dispositions of employment will need firm workplace travel planning and bus services to influence mode split in the short term. There is also considerable potential for encouraging sustainable travel patterns for off peak local travel.

3. *How can a choice be made between retaining the requirement for a new link road to A14 Junction 49 and pursuing sustainable transport measures either with or without a partial link road?; and*

Under current and planned levels of intervention, both should be pursued. Mechanisms need to be identified for the accelerated funding of useful and attractive active mode facilities and bus services.

4. *Could a further expansion in dwelling numbers be accommodated on this basis?*

It is likely that with widespread, major and comprehensive interventions, including parking controls at workplaces, that either the link road could be dispensed with, or the level of development could be raised significantly.

AECOM

Appendix A – Trip Generation

Appendix A – Trip Generation

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 2006
- 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 Appendix A1 below:

Appendix A 1 – Average Number of Trips per Person per Year

Purpose of Travel	Trips per person/ year	Trips %
Commuting	160	15.4%
Business	35	3.4%
Education	62	6.0%
Escort Education	44	4.2%
Shopping	219	21.1%
Other Escort	97	9.3%
Personal Business	105	10.1%
Visiting Friends (both at private home and elsewhere)	168	16.2%
Sport & Entertainment	65	6.3%
Holidays & Day Trips	38	3.7%
Others (including just walk)	45	4.3%
All Purposes	1037	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 (1way) = 1037 (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 defines a trip as being one way, thus it is necessary to double the average daily trip per household figure to reflect two way trips i.e. arrivals and departures.

Table 6.6b of the National Travel Survey details that 11% and 8% of all weekday trips take place between the peak periods of 08:00 – 09:00 and 17:00 – 18:00 respectively.

Table 7.12 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 6.6a of the National Travel survey. These proportions are shown in Appendix A2 below:

Appendix A 2 – Trip Distribution by Purpose during AM and PM Peak

Purpose of Travel	AM Peak (08:00 - 09:00	PM Peak (17:00 - 18:00)
Commuting	32%	34%
Business	4%	6%
Education	28%	3%
Escort Education	15%	1%
Shopping	4%	13%
Personal Business	11%	18%
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 7.12 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 trips per household per day (weekday) =

Proposed Number of Dwellings.

X

Average Number of Trips Per Household.

X

10% or 8% for the AM and PM Peaks respectively.

Both of the peak hour trip generations can then be applied by journey purpose as identified in Appendix A2 above.

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.

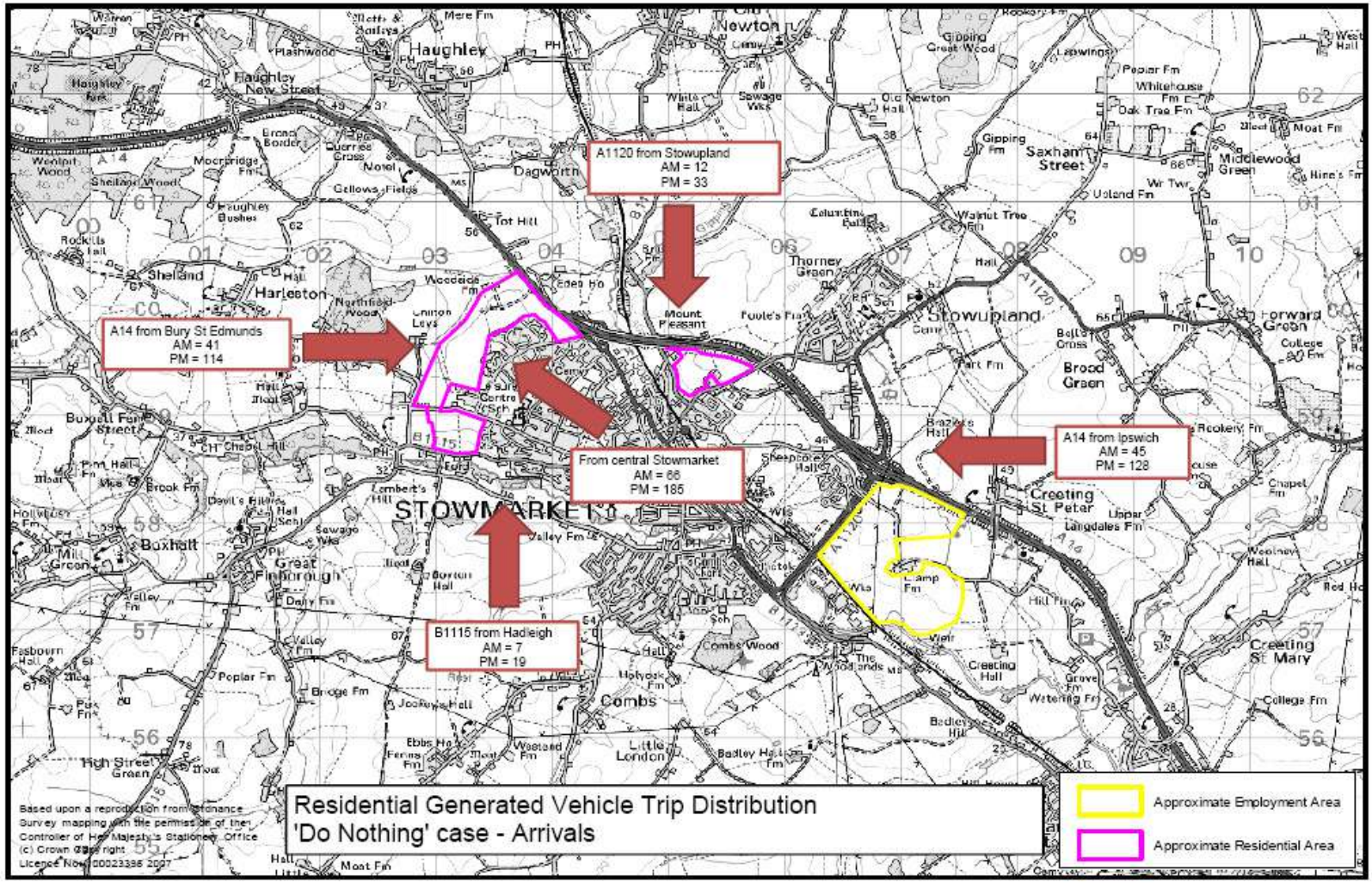
In order to create a vehicle trip rate per dwelling AM and PM arrival and departures, AECOM has used the TRICS database. The average trip rates for private houses (all sites) has been calculated, the arrival and departure profile applied to the AM and PM trips from the allocation sites.

AECOM

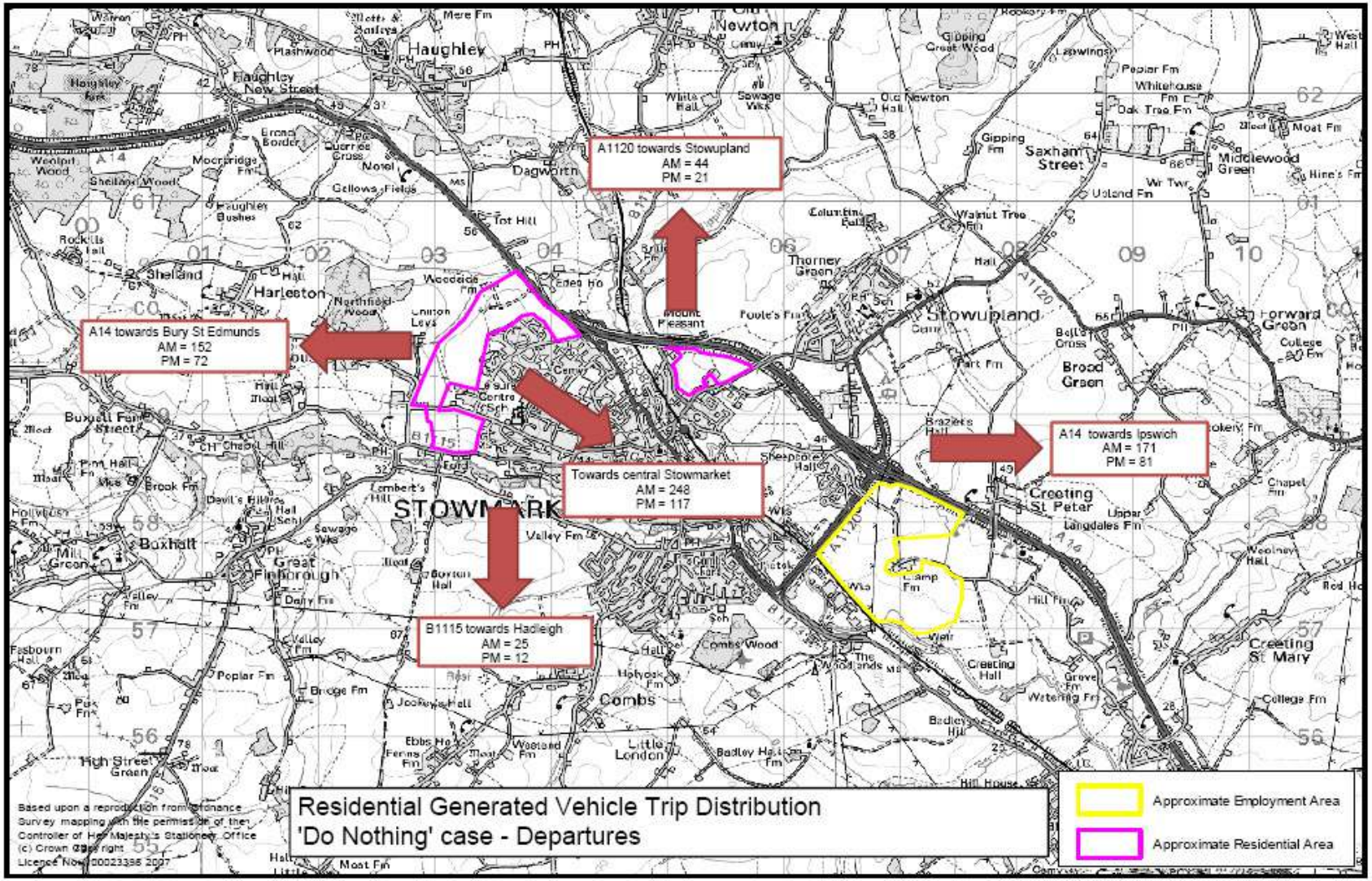
Appendix B – Trip Distribution

Appendix B – Trip Distribution

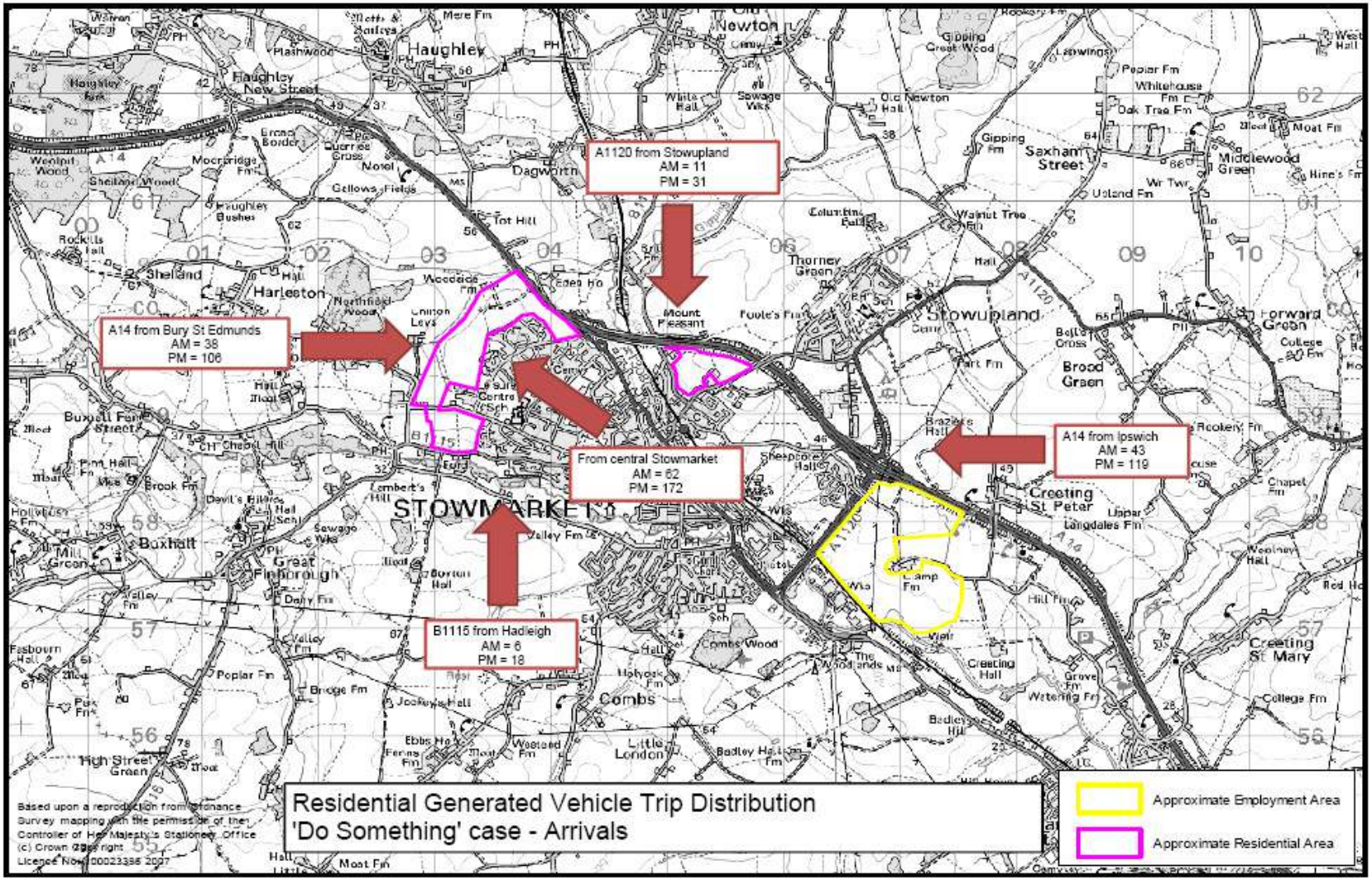
Appendix B 1 – Residential Generated Vehicle Trip Distribution 'Do Nothing' case - Arrivals



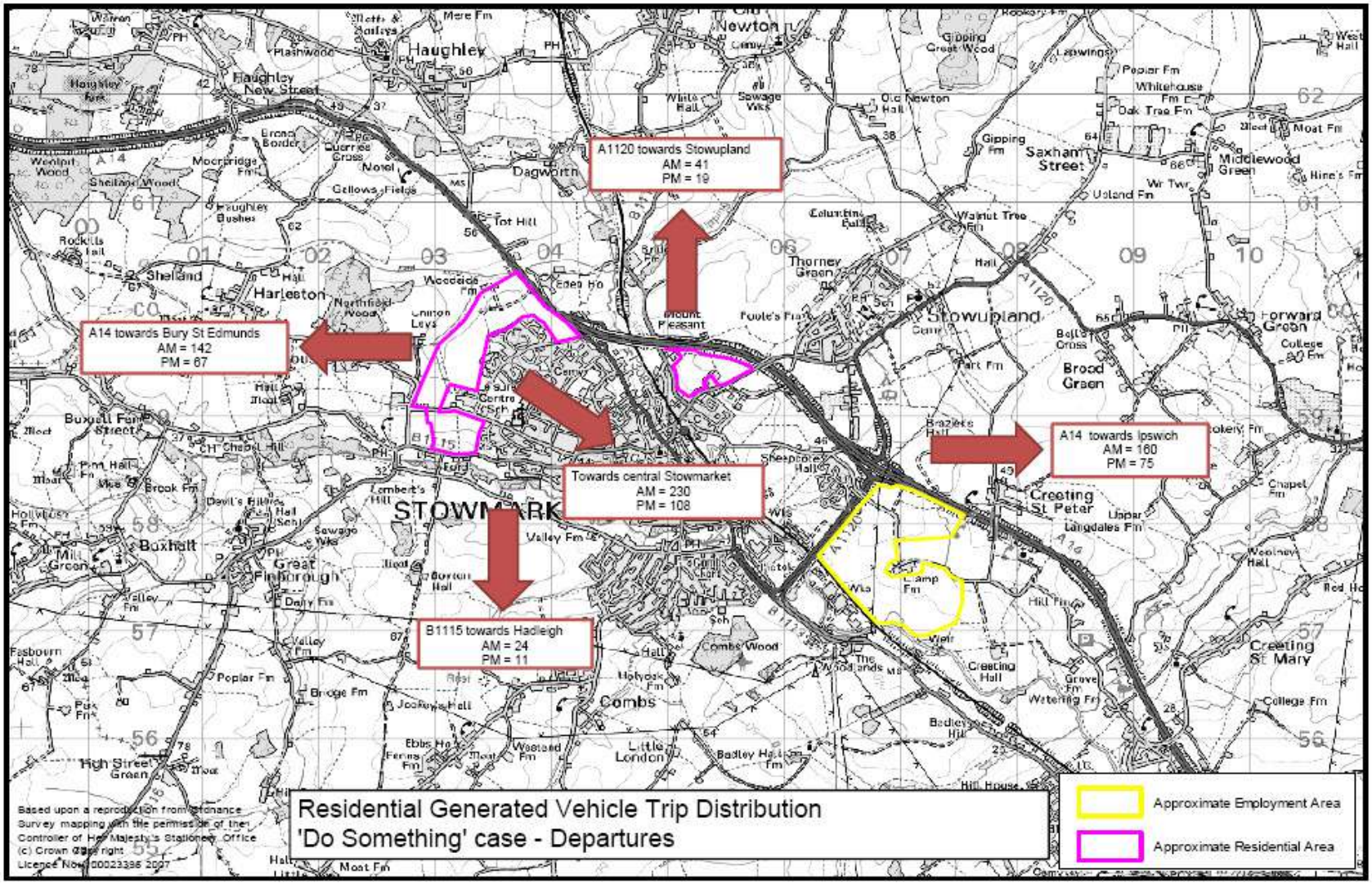
Appendix B 2 - Residential Generated Vehicle Trip Distribution 'Do Nothing' case - Departures



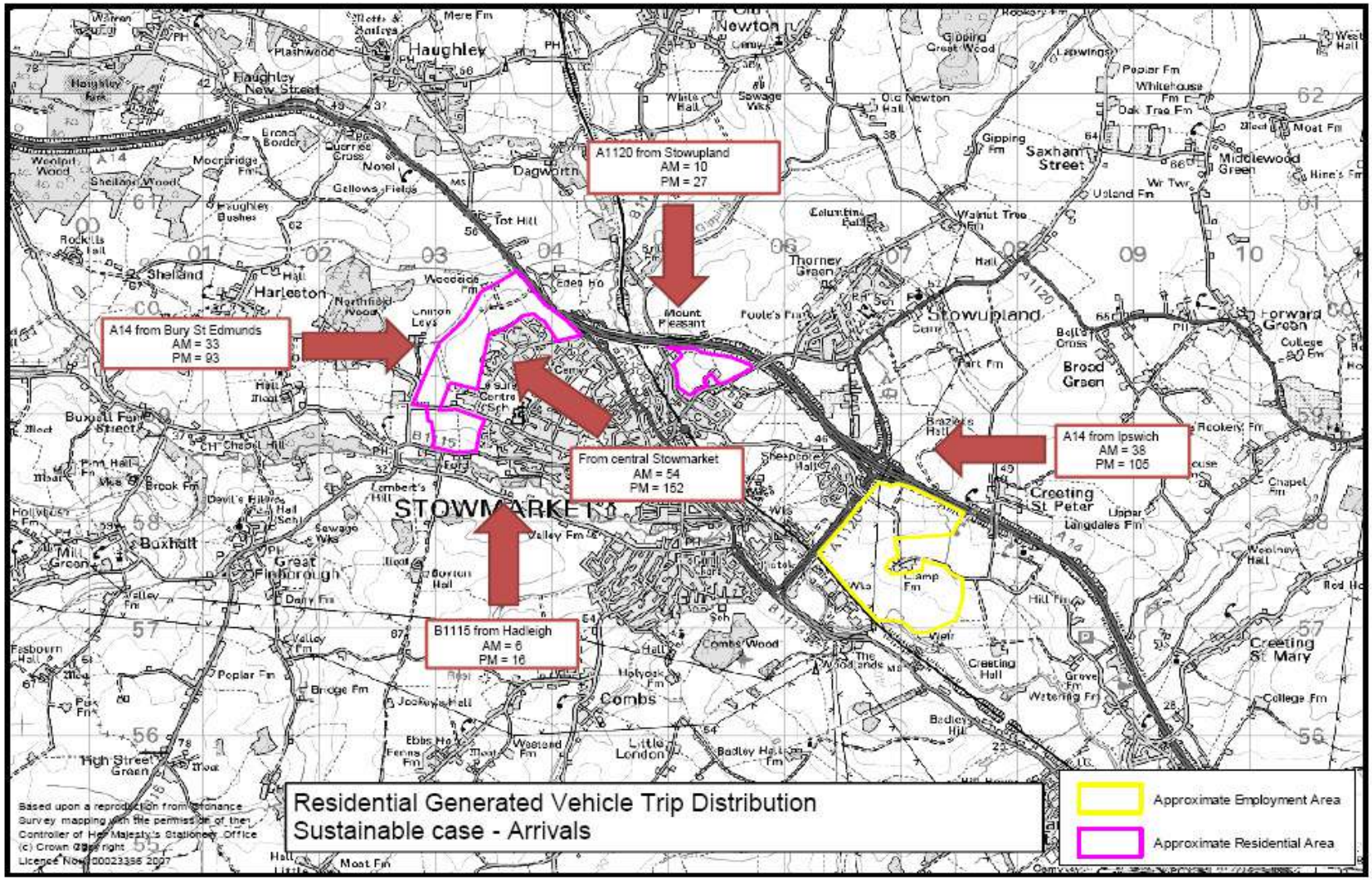
Appendix B 3 - Residential Generated Vehicle Trip Distribution 'Do Something' - Arrivals



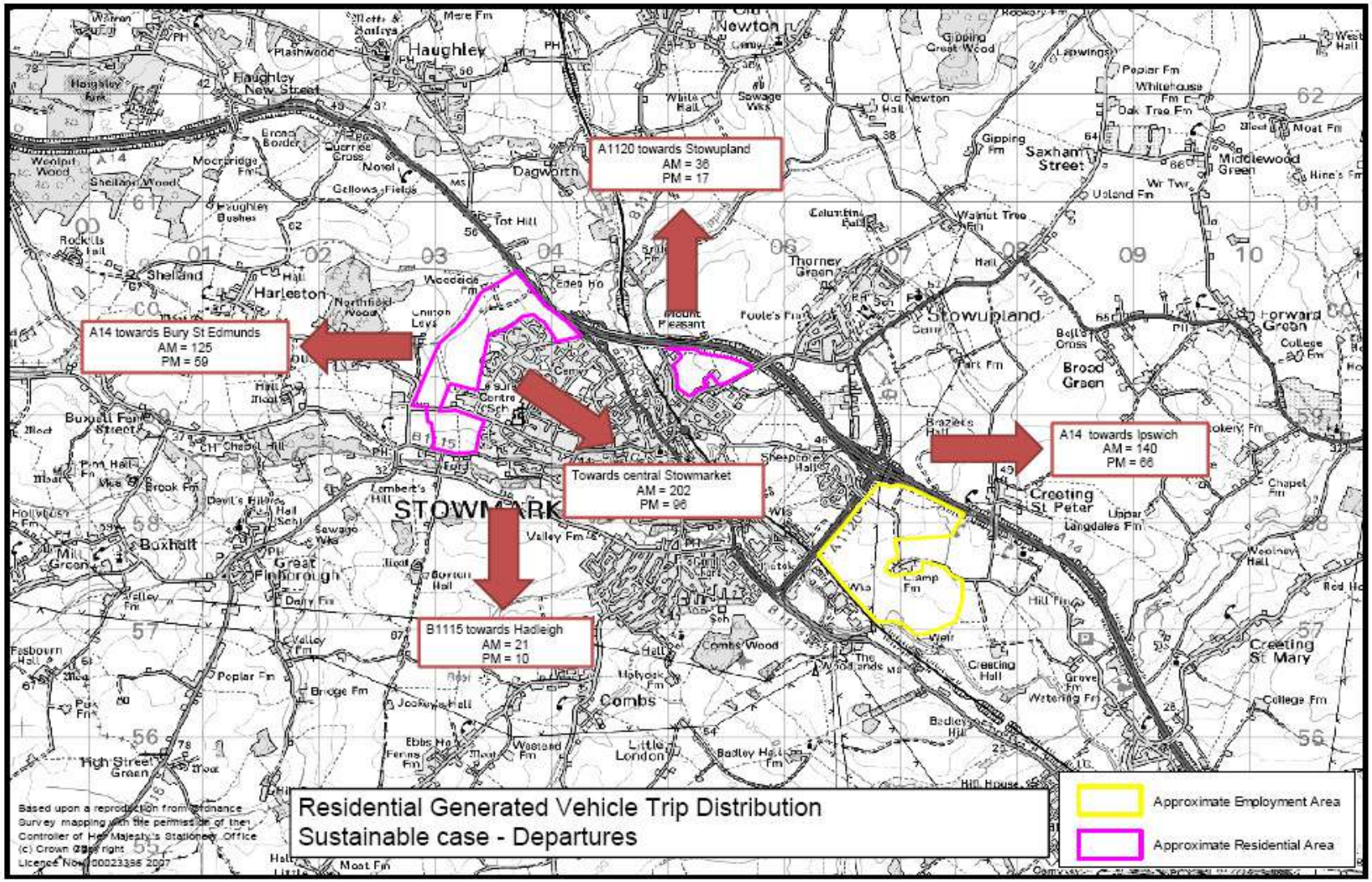
Appendix B 4 – Residential Generated Vehicle Trip Distribution 'Do Something' – Departures



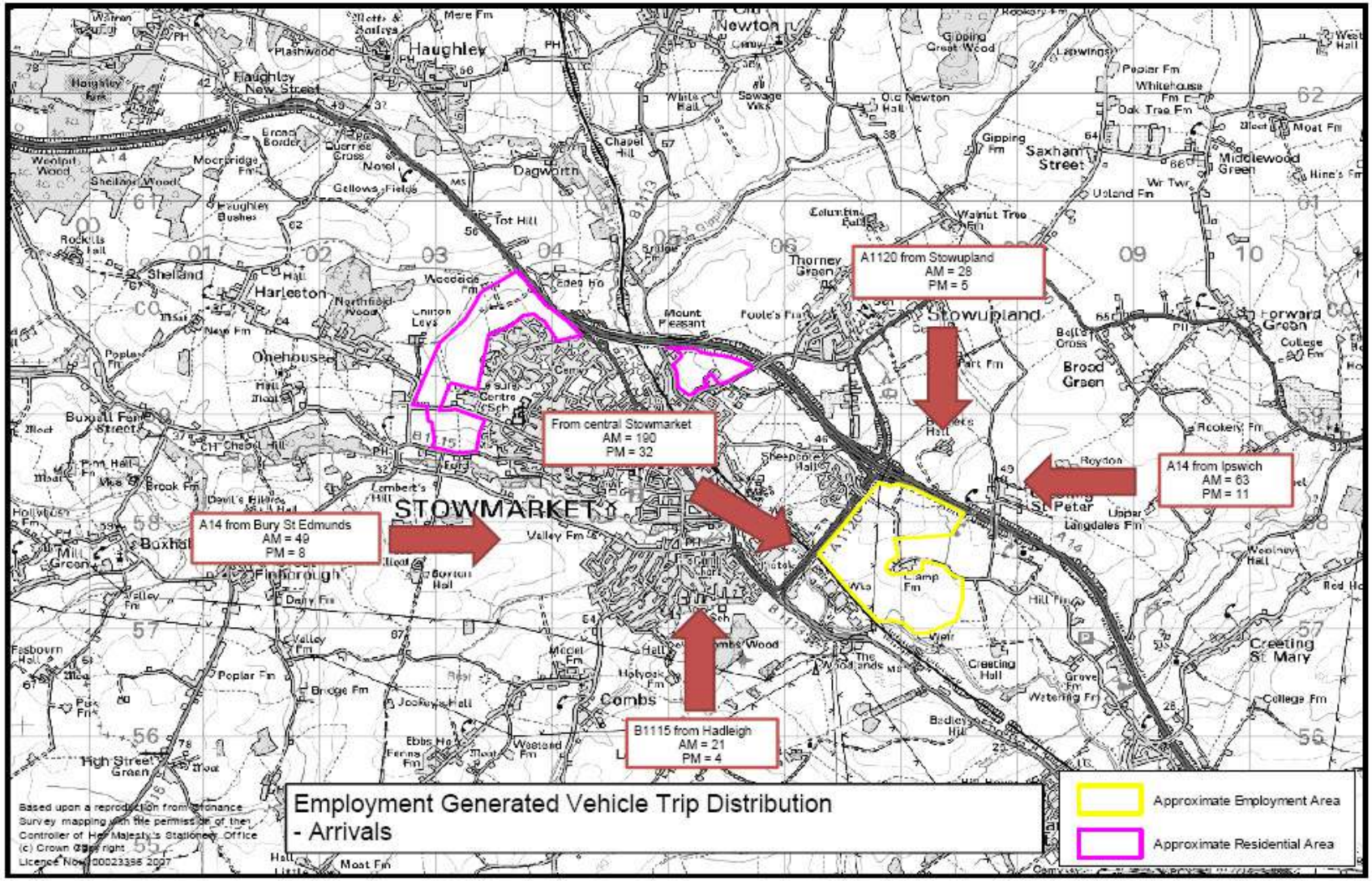
Appendix B 5 – Residential Generated Vehicle Trip Distribution Sustainable case – Arrivals



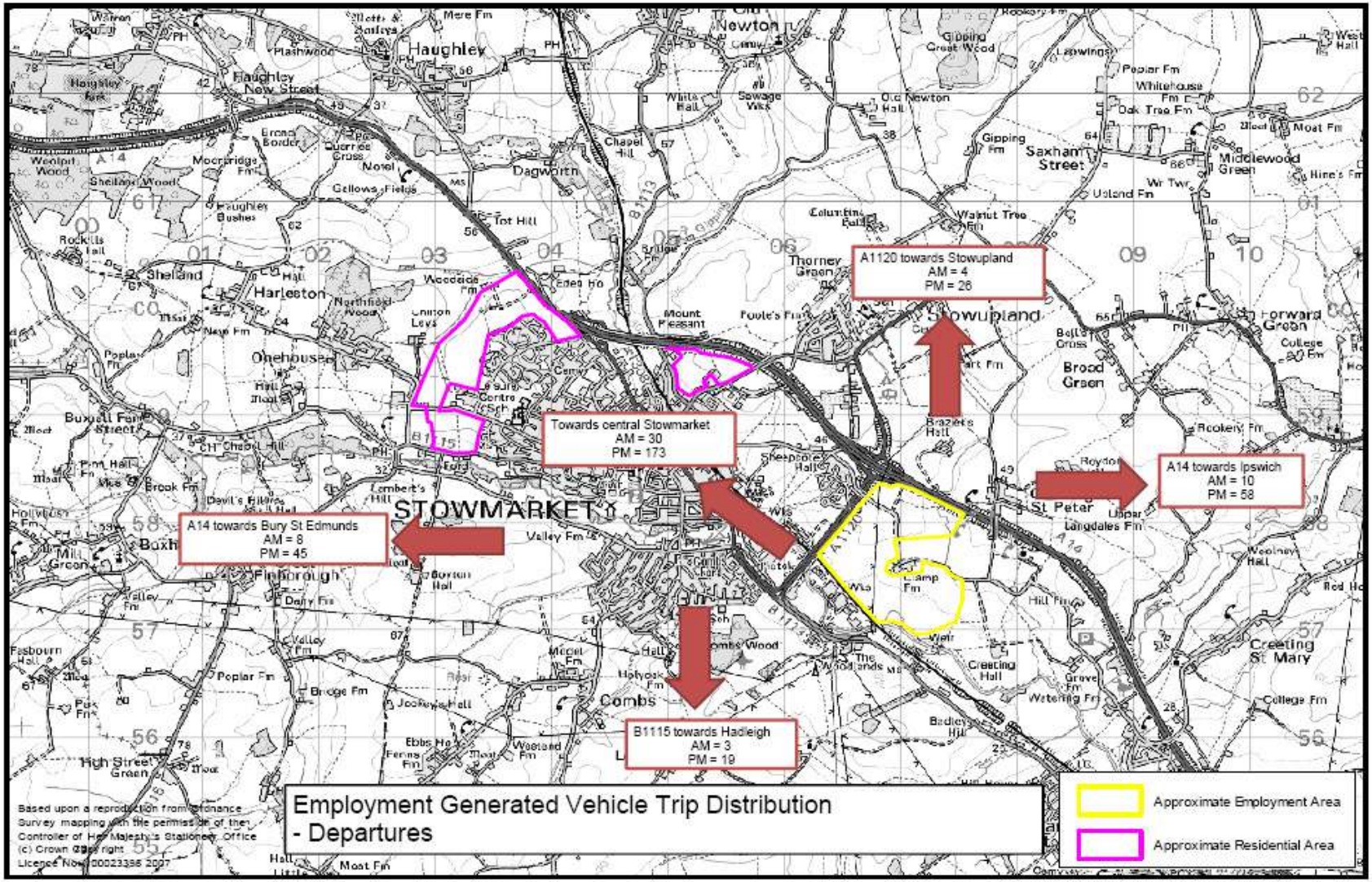
Appendix B 6 - Residential Generated Vehicle Trip Distribution Sustainable case – Departures



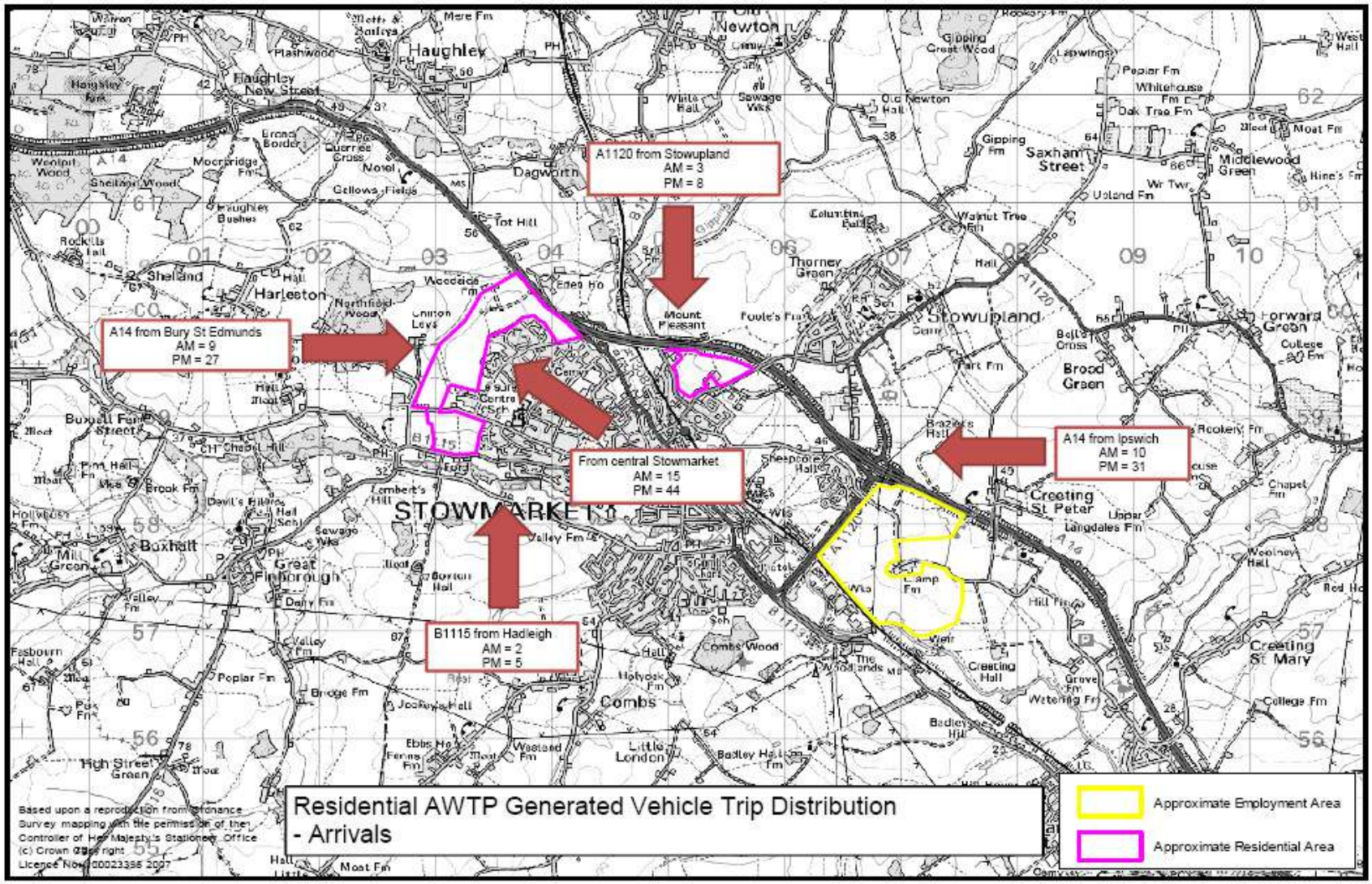
Appendix B 7 - Employment Generated Vehicle Trip Distribution - Arrivals



Appendix B 8 - Employment Generated Vehicle Trip Distribution - Departures



Appendix B 9 - Residential AWTP Generated Vehicle Trip Distribution - Arrivals



Appendix B 10 - Residential AWTP Generated Vehicle Trip Distribution - Departures