

Forest Heath LDF Transport Impacts

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Transport Impacts

Rev No	Comments	Checked by	Approved by	Date
1	Internal draft	CG		16/11/2009
2	Partial draft for client comments		BH	23/11/2009
3	Final draft to client		BH	30/11/2009

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Job No 60142327

Reference 001

Date Created 30/11/2009

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1. Introduction

Introduction

- 1.1 This Report has been prepared by AECOM, the transport planning consultancy partner providing support to Suffolk County Council. The work described here has been commissioned jointly by Forest Heath District Council (FHDC) and Suffolk County Council (SCC). The detailed scope of work was described in a Proposal from AECOM dated 12 October 2009, responding to a draft Brief from FHDC.
- 1.2 The work concerns a review of the transport impacts implications of the emerging proposals for the broad locations of housing provision being discussed as part of the development of the Forest Heath Core Strategy. The review concentrates on two main aspects of the impacts: the way in which the developments can achieve a high level of sustainable transport connections within the overall land use pattern; and the likely scale and location of specific car traffic impacts on the connections to the strategic road network.
- 1.3 An Inception Report was prepared which outlined the work to be undertaken. A final version of this was issued on 9 November 2009.
- 1.4 The brief envisaged a six week programme – broadly mid October through to late November. This Draft Report has been issued in late November to meet the deadline for Examination in Public (EiP) at which transport matters have been allocated the dates at the end of the EiP to allow for this study to be completed.
- 1.5 The work undertaken for this review has been entirely based on existing sources and no new data collection has been undertaken. The transport analyses and judgements are intended to inform the LDF evidence base for FHDC and SCC. Where relevant, consideration has been given to the likely concerns of the Highways Agency. As the LDF develops, more detailed and quantitative analyses will be required. The work described here will in due course be complemented by specific Transport Assessments prepared by individual potential site developers.

Forest Heath District Council LDF Process

- 1.6 The FHDC LDF process has been through the following stages:
- Issues and Options consultation – July 2005;
 - Preferred Option consultation – September 2006;
 - Final Option consultation – August 2008;
 - Submission publication for representations – March 2009; and
 - Submission to the Secretary of State – August 2009.

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

- 1.7 As the LDF Options were developed in more detail, it became appropriate to develop the evidence base in parallel – this Study and Report provides one independent strand of that evidence base.

Objectives of Study

1.8 The objectives of this study are as follows:

- To provide a robust evidence base related to transport and access issues to inform the LDF process;
- To draw conclusions on the overall spatial strategy, including comments on the broad options being discussed;
- To examine the broad locations and allocations put forward in the Spatial Options housing provisions, and assess their possible transport facilities and infrastructure requirements; and
- To consider the methods for delivering the transport requirements.

Contents

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

2. Policy Context

National Transport Policy

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

Regional Spatial Strategy and Transport Policy

East of England Plan (2008)

2.5 The East of England Plan is the revision to the Regional Spatial Strategy for the East of England, which was submitted to the Secretary of State (SoS) in December 2004. The original was then amended following changes suggested by the SoS and the consultation period which followed.

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

2.7 The Plan covers the counties of Norfolk, Suffolk, Cambridgeshire, Essex, Hertfordshire and Bedfordshire. It thus contains relevant sections of the Milton Keynes South Midlands Sub-Regional Strategy (2005).

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

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

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

To address housing shortages in the region by:

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

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

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

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

- *Ensuring new development fulfils the principles of sustainable communities, providing a well designed living environment adequately supported by social and green infrastructure; and*
- *Promoting social cohesion by improving access to work, services and other facilities, especially for those who are disadvantaged."*

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

Policy SS1: Achieving Sustainable Development

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

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

Policy SS2: Overall Spatial Strategy

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

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

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

2.12 New policies to be developed should:

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

Adopt an approach to the location of major development which prioritises the re-use of previously developed land in and around urban areas to the fullest

extent possible while ensuring an adequate supply of land for development consistent with the achievement of a sustainable pattern of growth and the delivery of housing in accordance with Policy H1."

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

Policy SS4: Towns other than Key Centres and Rural Areas

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

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

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

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

- 2.17 For Forest Heath as a whole, between April 2001 and March 2021, there is a minimum dwelling provision of 5,600 new dwellings, of which 1,340 dwellings had been built by March 2006. This leaves 5,590 dwellings to be built by March 2021.

Regional Transport Strategy (RTS)

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

- *"To manage travel behaviour and the demand for transport to reduce the rate of road traffic growth and ensure the transport sector makes an appropriate contribution to reducing greenhouse gas emissions;*
- *To encourage efficient use of existing transport infrastructure;*
- *To enable the provision of the infrastructure and transport services necessary to support*

existing communities and development proposed in the spatial strategy;

- *To improve access to jobs, services and leisure facilities."*

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

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

Policy T2: Changing Travel Behaviour

- 2.20 This policy is particularly relevant to influencing travel behaviour and the policies suggested could be applied to the potential broad directions of growth in Forest Heath District to try and promote and ensure sustainable travel.

- 2.21 The policy aims:

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

- 2.22 This could be achieved through the following policies:

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

Policy T4: Urban Transport

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

- *“Ensuring urban extensions and other major developments are linked from the outset into the existing urban structure through safe, well designed pedestrian and cycling routes and a high standard of public transport;*
- *Capitalising on opportunities provided by new development to achieve area wide improvements in public transport services, footpaths and cycle networks;*
- *Promoting public transport through quality partnerships or other agreements to deliver enhanced services, improved interchange, increased access, higher levels of public visibility, better travel information, and appropriate traffic management measures; and*
- *Improvements to local networks for walking and cycling, including increasing the attractiveness and safety of the public realm.”*

Policy T6: Strategic and Regional Road Networks

2.24 Development in Forest Heath is likely to have an impact on some sections of the A11 and A14 Trunk Roads. Policy T6 focuses on maintaining such strategic and regional road networks to ensure the following:

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

Policy T8: Local Roads

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

2.26 This policy is therefore aimed at Local Authorities to:

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

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

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

Policy T13: Public Transport Accessibility

2.28 Policy T13 states that:

“Public transport provision, including demand responsive services, should be improved as part of a package of measures to improve accessibility. Public transport use should be encouraged through the region by increasing accessibility to appropriate levels of service of as high a proportion of households as possible, enabling them to access core services (education, employment, health and retail).”

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

Suffolk County Council Policy

Suffolk County Council Local Transport Plan (2006 – 2011)

2.30 Suffolk County Council's Local Transport Plan (LTP) covers the period from 2006 to 2011 and focuses on how the County proposes to implement their transport strategy as well as outlining any longer term transport objectives for the County. The following plan – LTP3 – is starting to be outlined. During 2010, the LTP3 will be developed and the transition will begin. It is expected that LTP3 will be more closely integrated with the overall SCC policies for health, environment and the economy, and will be drawn up in the expectation of reducing resources being channelled through the LTP process.

2.31 The objectives identified in the LTP which can be considered relevant to Forest Heath District include:

- Improve public transport, walking and cycling;
- Develop sustainable modes of travel between west Suffolk and employment opportunities in Cambridge;
- Better manage and target investment on the A14 and improve safety by reducing conflicts between passenger transport (including cycling) and freight;
- Minimise the impact of traffic and transport infrastructure (including air quality impacts) in market towns, villages and tourism hotspots to protect the county's environment and built heritage; and
- Maintain and improve Suffolk's transport network to support businesses and communities.

2.32 The vision for transport in Suffolk for the next 15 to 20 years is:

"to deliver sustainable travel patterns that support Suffolk's ambitions to meet social and economic growth, enable regeneration and to fulfil its gateway role, whilst protecting its unique environment and quality of life."

2.33 Overall trends and statistics for the county reveal that:

- There will be an overall 45% increase in car trips and 28% increase in heavy goods vehicle trips along the A14 corridor in the next 15 years;

- Over 85% of Suffolk's working population are employed in the county;
- The major commuting movements within the county are to and from Ipswich, Bury St Edmunds and the United States' military bases in Forest Heath;
- Car ownership is high due to the rural nature of the county (rising by 7% between 2001 and 2003);
- Motorcycles represent a high percentage of all licensed vehicles (5.2%);
- Cycling and walking as modes of transport have declined over the past 10 years;
- The car is used for short trips despite high levels of cycle ownership (70% of households) in the county; and
- There is a high density of rights of way network in Suffolk with 73% of the population using the network weekly.

2.34 The accessibility section of the LTP highlights that accessibility within towns and urban areas is often considered adequate. However, in order for SCC to meet their aims of reducing congestion and improving air quality, more emphasis will need to be placed on walking and cycling. It is highlighted that this is particularly important in the main towns of the county where shorter distances mean that travelling by walking and cycling is more viable.

2.35 The overall aim of SCC's accessibility strategy is:

"to provide better opportunities to access employment, education, health, shopping and leisure, particularly for those people at risk from social exclusion due to location, income or other forms of disadvantage."

2.36 It is therefore vital that any new developments are located in areas where this access is possible or where methods are in place to ensure that there is an adequate level of accessibility to those residents without access to a car.

2.37 The LTP has identified that peak period congestion occurs on through traffic routes in market towns and villages, and that there is seasonal congestion in some rural areas and tourist honey pots. The A14 is also highlighted as suffering from congestion with a number of junctions approaching capacity. In order to reduce congestion as a whole, the LTP proposes investment in public transport infrastructure and sustainable travel. This includes:

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

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

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

2.39 The LTP states that SCC will look at options for tackling congestion problems in market towns and villages throughout Suffolk, including in some cases the possibility of bypass options, initially at Brandon, which currently suffers from traffic, particularly heavy goods traffic.

2.40 Brandon was established as a priority by SCC for some scheme to relieve the A1065 through Brandon. A 2004 assessment, however, indicated that a bypass could have severe environmental impacts, and was unlikely to meet central government criteria for public funding. SCC therefore continues to work on a range of solutions with the intention of bringing forward a preferred scheme.

Forest Heath District Council Policy

Forest Heath Local Development Framework – Core Strategy Proposed Submission Document (March 2009)

- 2.41 The above document details the overall strategic vision for Forest Heath. Following the seven week consultation period which took place between April and May 2009, the document was submitted to the Secretary of State for Examination in Public as the Development Plan Document for the District.
- 2.42 The Core Strategy will provide the long term vision for the District up to 2021 and will consider residential growth up to 2031. It is designed to meet the needs of the Regional Spatial Strategy for the East of England.
- 2.43 Policy CS1 is particularly relevant to this Study as it outlines each of the five areas in which development is proposed to take place within Forest Heath as well as the proposed Greenfield and brownfield site distributions.
- 2.44 Table 1 based on information provided in the Core Strategy outlines the breakdown of housing.

Table 1 – Potential Housing Allocations Identified in the Core Strategy

Phased housing requirement	No. of Dwellings
Houses required: 2001 - 2021	6,400
Houses Required: 2021 - 2031	3,700
TOTAL: 2001 - 2031	10,100
Houses Built: 2001 – 2008	1,625
Houses Required: 2008 - 2031	8,475
Brownfield and Greenfield Breakdown	
Brownfield Allocations Required	1,381 (16%)
Greenfield Allocations Required	7,094 (84%)
TOTAL	8,475

- 2.45 Policy CS7 provides information regarding the overall housing provision per area. This can be seen in Table 2.

Table 2 – Proposed Overall Housing Provision (2010 – 2031)

	Brownfield	Greenfield	Mixed	Total
Newmarket	240	1,400	0	1,640
Brandon	260	500	0	760
Mildenhall	260	1,000	70	1,330
Lakenheath	70	600	0	760
Red Lodge	520	400	280	1,200
Primary Villages	700		0	700

- 2.46 A higher provision for housing is suggested in Brandon (an additional 1,000 dwellings), in order to support the provision of a northern relief road for the town. If the proposal proves to be deliverable and support is obtained for funding the relief road, then further development beyond the plan period may be necessary to assist delivery.

Study Assumptions

- 2.47 Within the FHDC LDF process, the broad locations for housing development have been identified in principle. The subsequent process of allocating quanta of dwellings between alternative or complementary sites, and identifying specific sites and connections to the transport networks, is just starting, and this Study forms part of the process.
- 2.48 At the workshop, FHDC provided the Consultants with information regarding the broad directions that the growth would be in within each area, and the potential numbers of dwellings per area.
- 2.49 The Consultants have had to make a series of informal assumptions to start this process:
- All areas are considered independently of each other;
 - The specific connection points from the broad locations to the existing local road networks;
 - The probable scale of transport infrastructure and facilities investment likely to be undertaken in any case by the developer and local authorities;
 - The reasonable upper and lower bound range of traffic generation levels, taking into account nearby existing 'business as usual' travel patterns, and the likely behavioural changes to more sustainable, lower car use, patterns in the near future; and
 - The range of background travel growth in the region, and its likely impact on critical elements in the transport networks.
- 2.50 Using these Consultants' starting assumptions, the implications of the various housing development options are worked through, to result in a suggested list of costed transport interventions required for each broad location.
- 2.51 Subsequent iterations of the process can consider these initial suggestions together with other sectorial environmental and community facilities studies, together with the evolving commercial pressures for development at particular sites.
- 2.52 At this stage, the Study has focussed solely on the five main areas identified in the Spatial Strategy. It is acknowledged that development is likely to also occur in the Key Service Centres of the District as within other villages. These numbers of dwellings at these individual locations are unlikely to have an impact on the road network, and in themselves do not have the critical mass to support the provision of

any significant sustainable transport measures. Given this, these 700 dwellings will not be considered as part of this assessment.

3. Accessibility and Sustainability Review

Broad Location Assumptions

- 3.1 The potential housing allocations and the areas under consideration are all detailed in the Core Strategy Submission Document for Forest Heath. This is discussed further in Section 2 of this report.
- 3.2 The five towns which will be considered under this Study are:
- Newmarket;
 - Brandon;
 - Mildenhall;
 - Lakenheath; and
 - Red Lodge.
- 3.3 The assumptions made regarding the number of dwellings to be allocated per town for the purposes of this study can be seen in Table 3.

Table 3 – Dwelling Allocations per Area (2010 to 2031)

	No. of Dwellings
Newmarket	1,640
Brandon	760
Mildenhall	1,330
Lakenheath	600
Red Lodge	1,200

- 3.4 A higher provision for housing is suggested in Brandon (an additional 1,000 dwellings), in order to support the provision of a northern relief road for the town. If the proposal proves to be deliverable and support is obtained for funding the relief road, then further development beyond the plan period may be necessary to assist delivery.
- 3.5 At the workshop held with FHDC, SCC and the Highways Agency, the number of dwellings per area was discussed. In reality these potential dwellings will be split over one or more broad locations within the areas. However, for simplicity and as a worst case scenario, AECOM has assessed the areas assuming the maximum number of dwellings on the largest broad location within each area.

Key Services

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

Key Employment Sites

- 3.9 The employment sites that have been taken into consideration in this study are:
- Newmarket Town Centre;
 - The Oaks Business Park / Studlands Park Industrial Estate, Newmarket;
 - Brandon Town Centre;
 - Brandon Business Centre;
 - Mildenhall Town Centre;
 - RAF Mildenhall;
 - Mildenhall Industrial Estate;
 - Lakenheath Town Centre;
 - RAF Lakenheath; and
 - Land at Red Lodge.
- 3.10 Key services and key employment sites are the two main categories of travel destinations considered in the review of walk/cycle and public transport accessibility.

Existing Accessibility

- 3.11 AECOM has assessed the existing level of accessibility and sustainability of each of the broad directions by public transport, walking and cycling, as well as taking into account the existing road network.
- 3.12 Each mode of transport has been assessed in terms of existing provision to the potential broad directions. An overall assessment has then been undertaken. It should be noted that this is a qualitative assessment and is based on research using bus and rail timetables, aerial photography and cycle maps for the area. No on site research has been undertaken. Appendix A contains a plan for each broad location, which shows the positions of key services, 1km and 3km radius buffers from the edge of the broad locations, as well as current bus routes which serve the areas.
- 3.13 1km and 3km radius buffers have been used as these have been taken by AECOM to enclose the likely areas accessible from the developments under the PPG 13 Transport acceptable criteria of 2km for a walk trip, and 5km for a cycle trip (on average from anywhere in the development, along convenient routes).
- 3.14 A view as to the potential for improving the accessibility to each of the potential broad directions by sustainable modes has also been included. This is qualitative and does not take into account costs or any other restrictions which may be present.

Walking and Cycling

- 3.15 AECOM has used the Sustrans website and information provided by the cycling officer at SCC to assess existing cycling provision in the area.
- 3.16 Aerial photography has been used to assess the potential for walking links and to view current footpaths in the area. It should be noted that this is not an exhaustive method and therefore more detailed analysis would need to be undertaken to properly assess the walking links in the area.

- 3.17 AECOM has rated walking and cycling on the following scale:

- Good = existing facilities in place;
- Reasonable = some signs of existing facilities but improvements would be needed to promote these modes further; and
- Poor = no existing facilities in place, or such a low level that substantial improvements would need to be made.

Table 4 – Existing Walking and Cycling Accessibility

Area	Walking Facilities	Cycling Facilities	Overall	Comments
Newmarket	Reasonable	Reasonable	Reasonable	<ul style="list-style-type: none"> • An existing traffic free cycle route links the town centre to Exning and residential areas to the northeast of town. This forms part of National Cycle Route 51. • An existing on road cycle route links the town centre to the east and Moulton again via National Cycle Route 51. • There is an on road cycle route which links the town centre to the rail station but according to information provided by SCC, safety measures are needed along this route. • There are a number of Pegasus crossings to accommodate horses and horse walks within the town.
Brandon	Reasonable	Poor	Poor	<ul style="list-style-type: none"> • The size of Brandon is such that some parts can be considered to be within walking and cycling distance of the town centre. • Both an on road and traffic free cycle route connect Weeting to the north of Brandon to Thetford Forest to the east and the village of Hockwald cum Wilton to the west. This is more of a leisure route. • Brandon is also able to take advantage of many of the off road cycle tracks that pass through Thetford Forest.
Mildenhall	Reasonable	Reasonable	Reasonable	<ul style="list-style-type: none"> • The small compact nature of Mildenhall means that the town centre would be within both walking and cycling distance. • A number of on road cycle routes exist which link the town centre to the northern parts of the town. As with Newmarket, information provided by SCC states that safety measures are required along these routes. • There are a few off road cycle routes within the town, but the majority of these are to the east of the town. • A regional cycle route crosses through the town centre in a southeast – northwest direction, but this is on road.
Lakenheath	Reasonable	Poor	Poor	<ul style="list-style-type: none"> • The small compact nature of Lakenheath means that the town centre would be within both walking and cycling distance. • However, no cycle routes are known to exist.
Red Lodge	Poor	Poor	Poor	<ul style="list-style-type: none"> • The small compact nature of Red Lodge means that any centre would be within both walking and cycling distance. • The lack of facilities within Red Lodge, however, means that residents currently have to travel further afield and no facilities can be considered therefore to be within walking or cycling distance. • The Kennett rail station is 4kms away – within easy cycling distance, but requiring facilities, and an improved rail service frequency

Public Transport

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

Bus

3.19 With regards to bus accessibility, AECOM has reviewed the existing level of bus service in terms of the number of routes that currently serve each broad allocation area and the frequency of these services (see Table 5). This information has been obtained from bus timetables for Newmarket & Surrounding Area, Brandon & Surrounding Area, and Mildenhall & Surrounding Area.

Table 5 – Existing Bus Accessibility

	No. of bus routes that serve the area	No. of bus routes that serve the area approx hourly	No. of bus routes that serve the area approx half hourly	Overall existing bus accessibility
Newmarket	8	4	1	Good
Brandon	6	0	0	Poor
Mildenhall	3	1	0	Reasonable
Lakenheath	2	0	0	Poor
Red Lodge	1	1	0	Reasonable

3.20 The five allocation areas are quite small in size, and the number of services operating within the area is limited. The assessment has taken into account all bus services that operate in the area on a basis of at least four buses per day (Monday to Saturday).

3.21 The Newmarket site is well served by inter urban services, with four services providing approximately five buses per hour linking to the centre of Newmarket, and four buses per hour linking to

Cambridge. Hourly services serve Ely, Bury St Edmunds, and Mildenhall.

3.22 Mildenhall and Red Lodge have a bus service which operates approximately hourly (Route 400 / 401) which connects Mildenhall and Newmarket.

3.23 Brandon and Lakenheath have a less frequent service at approximately one bus every other hour.

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

Rail

3.25 The proximity of the closest rail station to each of the areas and the frequency of the service from this station is shown in Table 6. Distances have been measured along existing roads - footpath shortcuts have not been taken into account.

3.26 With the exception of Mildenhall, all areas have at least nominal access to a rail station. At Newmarket and Brandon, the station is close to the town centre. For Lakenheath the station is some 3.5km north of the town centre (but there are now weekday services). At Red Lodge, the closest rail station would be in the village of Kennet, some 4km away.

3.27 Both Newmarket and Kennett are on the Ipswich to Cambridge line. For connections to London it is necessary to change at Cambridge. The rail service operates approximately hourly from Newmarket and every other hour from Kennett (Monday to Saturday) with a train every other hour on a Sunday at Newmarket. Journey times from Newmarket to Cambridge are just under 30 minutes and to Ipswich are about an hour.

3.28 Brandon rail station is on the Cambridge to Norwich line. The rail service operates approximately hourly at Brandon (Monday to Saturday). From Brandon to Cambridge, the journey time is also just under 30 minutes, and to Norwich, about 45 minutes.

3.29 Lakenheath has no services stopping during the week, with only a few trains stopping on Saturday and Sunday.

Table 6 – Existing Rail Accessibility

	Distance to closest rail station	Frequency of service from closest rail station	Existing rail accessibility
Newmarket	~3.0km	Hourly	Good
Brandon	~2.4km	Hourly	Good
Mildenhall			None
Lakenheath	~3.5km	Up to four per weekend day	None
Red Lodge (Kennett)	~4.0km	Every other hour	Poor

Accessibility to Services

3.30 PPG13: Transport states that 2km is considered an acceptable walking distance to facilities with 5km an acceptable cycling distance. AECOM has used crowfly radii of 1km, and 3km to represent actual likely walking and cycling catchment boundaries, as shown in Appendix A.

3.31 The following paragraphs discuss each of the areas in turn.

Newmarket

3.32 Newmarket is the most accessible of all the areas. This is because of its size and the wider range of key services available. This is reflected in the high journey to work mode shares by bicycle (6%) and on foot (16%). However, travel by public transport to work only accounts for 3% of all journey to work trips.

3.33 The location of the potential new development would be to the northeast of the town and this would allow it to benefit from The Oaks Business Park and Studlands Park Industrial Estate which are within walking distance of the broad location.

3.34 Additionally two existing bus services would connect the area to the town centre and bus station.

3.35 There is a Tesco supermarket and a middle school within walking distance of the area. More key

services and the town centre are within cycle distance.

3.36 The bus services which connect to the north eastern part of Newmarket operate at least hourly Monday to Saturday with four services a day on a Sunday.

3.37 The rail station in Newmarket is south of the town centre and no bus routes from the northern part of Newmarket connect to it. However, the rail station can be taken to be within both walking and cycling distance of the town centre and bus station.

3.38 There is a number of existing off road cycle routes within Newmarket, but these do not generally cover the north-eastern portion of the town. However, they do provide links along Exning Road and within the residential area to the east of Exning Road. From the town centre, no cycle facilities exist to provide a link to the rail station.

Brandon

3.39 Brandon is a self contained town on the edge of Thetford Forest with a number of key services. There is no high school within Brandon so students need to travel out of Brandon, mainly to Thetford or Mildenhall.

3.40 A Brandon town service bus route exists which links the residential and industrial areas of the town with the town centre and the village of Weeting to the north of the town. However, this service only operates hourly during the middle of the day.

3.41 Brandon is connected to both Mildenhall and Thetford by an inter-urban bus service which operates every other hour and therefore is unlikely to rival the car as a potential mode of transport on a regular basis.

3.42 There is a rail station to the north of the town which is served approximately hourly and provides direct connections to Newmarket, Cambridge and Norwich.

3.43 Brandon is well served by leisure cycle tracks within Thetford Forest and an off road cycle route to the north of the town, but no routes exist within the town itself.

Mildenhall

3.44 Mildenhall is a small town with a number of key services. Residential development until now has been largely to the north and northeast of the town

centre. This study considers the potential for development to the west of the town centre.

- 3.45 Mildenhall is one of only two centres within Forest Heath to have a secondary school and therefore attracts students from neighbouring areas.
- 3.46 Bus service provision within the town is reasonable in terms of the number of places served. However, the frequency of these services are poor (approximately an hourly service) and as was the case with Brandon, is unlikely to rival the car as a potential mode of transport on a regular basis.
- 3.47 There are a number of off road and on road cycle facilities within Mildenhall although these largely cover the already developed western part of the town.
- 3.48 The size of Mildenhall however is such that both walking and cycling are likely to be realistic means of travelling to and from the town. Census 2001 data for the town shows that some 11% of residents walk to work with some 6% choosing to cycle.
- 3.49 RAF Mildenhall is a key employment site in the area and is located to the northeast of the town near to the village of Beck Row. The distances to, and within, the base are not really feasible to be undertaken by foot.
- 3.50 Mildenhall Industrial Estate to the north of the town would also serve as a key employment site. This could also be considered to be within walking and cycling distance of the broad location.

Lakenheath

- 3.51 Lakenheath is a small town with few key services. Both the level of bus provision and cycle facilities is poor and residents are likely to have to travel by car. This is shown by the high car driver travel to work mode share of 74% (2001 Census).
- 3.52 The majority of Lakenheath can be considered to be within walking distance of the town centre with new development being proposed to the north of the town between the cut-off channel and the B1112.
- 3.53 There are no existing cycle facilities in Lakenheath although the relative compactness of the settlement means that all key facilities are within walk/cycle distance. There are however a lack of key services and therefore residents will need to travel further

afield (to Mildenhall) which is considered beyond walk/cycle distances.

- 3.54 RAF Lakenheath is a major employer and the site is located to the south of the town. A shopping facility (only for staff of the airbase) is located within the airbase itself which will go some way to reducing the need to travel.
- 3.55 A rail station exists some 3.5km to the north of Lakenheath town centre. This rail station is only served at weekends with one train in each direction on a Saturday and up to four trains each way on a Sunday.

Red Lodge

- 3.56 Red Lodge is located to the east of the A11 and is currently seeing a significant level of expansion through the construction of new homes. Under this study, this expansion would be to the southeast of the centre.
- 3.57 At present Red Lodge has a poor level of key services and little employment. Residents of the area need to travel further afield in order to access these. The relatively isolated location of Red Lodge in relation to larger centres in the area means that travel by car is high. In 2001 the Census results for the then village of Red Lodge showed some 78 percent of employed residents used the private car to drive to their usual place of employment.
- 3.58 Red Lodge has a cycle route at Green Lane, to the south edge of Red Lodge, and several other routes are planned in the new developments, both along Turnpike Road (the old A11) and at Warren Road. It is likely that a network of pedestrian and cycle facilities will be integrated through the settlement.
- 3.59 Red Lodge is served by one bus route which operates approximately hourly and connects the area to Newmarket and Mildenhall. However, the route is indirect, and journey times are long.
- 3.60 Kennett rail station is some 4km to the south of Red Lodge with train services every other hour. The bus route which passes through Red Lodge connects to the rail station but as the rail service is infrequent it is unlikely that this would be used regularly.

Potential Accessibility

3.61 The accessibility of all the broad directions can be improved. Table 7 summarises the potential for improvement for each broad direction, using the following qualitative measures:

- Good = existing facilities in place or the potential to provide a good level of sustainable access;
- Reasonable = some signs of existing facilities but improvements would be needed to promote these modes further or a some sustainable facilities likely to be present in the future; and
- Poor = no existing facilities in place or such a low level that substantial improvements would need to be made, or even with improvements, the broad direction is likely to lack in sustainable access.

3.62 Overall, a number of improvements could be made to improve accessibility within all the areas under consideration. These are:

- Increase frequency of existing bus services;
- Re-route bus services or provide shuttle minibus services, to ensure that new developments are served;
- Provide a Sunday service in the larger towns;
- Provide off road cycling facilities where possible to link the new developments to the town centre and key services;
- Ensure that cycle facilities such as safe cycle storage is provided to encourage cycling;
- Provide footpath links from the new developments to key locations; and
- Increase the frequency of the rail services (where applicable) either by having more trains stop at the stations in question or by funding extra services.

3.63 The potential accessibility of each area has been considered on an individual basis to establish whether it would be feasible to improve the overall level of sustainability.

Table 7 – Potential Accessibility

	Walking	Cycling	Bus / Rail	Overall
Newmarket	Good	Good	Good	Good
Brandon	Good	Good	Reasonable	Good
Mildenhall	Good	Good	Reasonable	Reasonable
Lakenheath	Reasonable	Reasonable	Reasonable	Reasonable
Red Lodge	Reasonable	Reasonable	Reasonable	Reasonable

Newmarket

3.64 Newmarket offers the best potential for improving accessibility by sustainable modes of transport. Cycle facilities are currently proposed along the A142 to the town centre and within the town centre itself.

3.65 A frequent and direct route bus service could be implemented to link the proposed new development to the town centre and rail station, and existing bus services could be extended to serve the rail station.

Brandon

3.66 Cycle facilities could be provided within Brandon to link the residential areas, including the potential new development to the town centre and industrial estates. Any new cycle facilities should also link to the existing leisure cycle tracks within Thetford Forest.

3.67 The frequency of the Brandon town service could be increased so that it operates during peak hours as well as more frequently during the day. This could also act as a good connector to the rail station.

3.68 The train and the proximity of the rail station could be promoted as a means of travel for both commuters to centres such as Cambridge and Norwich, as well as for leisure users of Thetford Forest.

Mildenhall

3.69 The frequency of the existing bus routes could be increased, especially those which serve the RAF sites in Mildenhall and Lakenheath. This would need to be considered as part of a workplace travel plan for the RAF/ USAF staff.

- 3.70 Cycle and footpath facilities could be provided on the western side of town to allow the potential new development to benefit of the compact nature of Mildenhall and its potential for walking and cycling.

Lakenheath

- 3.71 As with Mildenhall, the frequency of bus services to the RAF bases could be increased, especially to RAF Lakenheath. There is the potential to provide further pedestrian and cycle links serving the planned new foodstore outlet

Red Lodge

- 3.72 The potential sustainability of Red Lodge is only likely to improve if a greater number of key services are provided as a result of the substantial growth of the town.
- 3.73 However, it is unlikely that even with improvements to bus provision, and cycling and walking facilities, that Red Lodge will be able to rival the other areas in terms of sustainability because of its isolated location.
- 3.74 Potential accessibility could be improved by providing frequent and convenient bus and cycle facilities at Kennett station, combined with an hourly rail service to Ipswich and Cambridge.

4. Traffic Impact Assessment

Traffic Impacts Approach

4.1 The traffic impact analysis conducted as part of this study was limited to consideration of the possible traffic impact of the five areas. No detailed account was taken of the existing traffic generation and distribution in and through Newmarket, Brandon, Mildenhall, Lakenheath or Red Lodge. In summary, the process followed for each of the areas was as follows:

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

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

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

Table 8 – Representative Wards for each Area

Area	Ward
Newmarket	Severals (sic)
Brandon	Brandon East Brandon West
Mildenhall	Great Heath Market
Lakenheath	Lakenheath
Red Lodge	Red Lodge

4.4 The proposed number of dwellings assumed for each area has been detailed earlier in this report in Table 3.

4.5 Following discussions with FHDC, SCC and the Highways Agency, the following key junctions have been identified:

- A14 / A142 Fordham Road (A14 junction 37);
- A14 / A11 / A1304 Bury Road (A14 junction 38);
- A11 / A1101 Mildenhall Road / A1065 Brandon Road / A1101 Bury Road (A11 Fiveways);
- A1304 High Street / Exeter Road / A142 / A1304 Bury Road / B1063 (Clocktower roundabout, Newmarket);
- A1101 Kingsway / A1101 North Terrace / B1102 High Street (Mildenhall);
- A1065 London Road / A1065 High Street / B1107 Thetford Road (Brandon);
- B1107 Thetford Road / B1107 Beavor Lane / Lode Street (Brandon);
- A11/ B1085 Dane Hill Lane (Red Lodge); and
- A11/ B1085 Elms Road (Red Lodge).

For all areas, the traffic has been distributed onto the network so that the impacts at the relevant nearby junctions can be seen.

Trip Generation

- 4.6 Appendix B of this report details the methodology used to determine the trip rate and generation. These trip rates are calculated to simulate existing residential trip generation for each of the wards/broad directions. Thus these trip rates could be considered precautionary as no account is made for measures to increase sustainable travel. Table 9 shows the vehicle trip rates for each allocation site taking into account 2001 Census data, the National Travel Survey and the TRICS database.

Table 9 – Precautionary Vehicle Trip Rates for each Broad Direction of Growth (vehicles per hour per dwelling)

	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Newmarket	0.12	0.46	0.58	0.30	0.19	0.49
Brandon	0.12	0.46	0.58	0.30	0.19	0.49
Mildenhall	0.13	0.49	0.62	0.32	0.20	0.53
Lakenheath	0.14	0.52	0.65	0.34	0.22	0.56
Red Lodge	0.14	0.53	0.67	0.35	0.22	0.57

- 4.7 From the Census data it can be seen that Newmarket, Brandon and Mildenhall have lower car trip rates which are expected as they have a greater range of key services and are bigger in size.
- 4.8 Lakenheath and (the original village of) Red Lodge have the highest car trip rates of all the areas. This would appear plausible given the lack of services and facilities at these locations.
- 4.9 Applying the vehicle trip rates shown in Table 9 to the number of dwellings per broad direction of growth (see Table 3) the number of vehicle trips that would be generated per broad direction has been calculated, as shown in Tables 10.
- 4.10 These car trip generation estimates have been derived from merging several sources. The 2001 Census journey to work data alone is available to analyse the mode split and trip distribution. Using Journey to Work data for all peak trips is not precisely correct, as journeys associated with education and shopping for example may have a different mode and distribution. Indeed, a proportion of trips, for example shopping and education will be

internalised, and no account has been made for this. However, for the purposes of this assessment, it is considered a reasonable approximation.

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

Table 10 – Precautionary Vehicle Trip Generation per Broad Direction of Growth (car trips per hour)

	AM			PM		
	Arr	Dep	Total	Arr	Dep	Total
Newmarket	197	752	949	495	311	806
Brandon	89	341	430	226	142	368
Mildenhall	171	655	826	432	272	704
Lakenheath	103	395	498	262	165	427
Red Lodge	166	634	800	422	265	687

Trip Distribution

4.12 The journey to work split by mode for each broad direction has been calculated, and are presented in Table 11, using the ward/ broad direction comparators suggested in Table 8. This shows the percentage of trips made by each mode, and forms a starting point for discussing the scope for encouraging the use of modes other than car. It should be noted that these figures are derived from the 2001 Census, and, particularly in the case of service personnel travel in the Lakenheath and Mildenhall areas, are probably partial.

Table 11 - Travel to Work Mode Share per Area

	Car	Public Transport (Bus / Train)	Walking and Cycling
Newmarket	66%	3%	22%
Brandon	75%	3%	13%
Mildenhall	71%	2%	18%
Lakenheath	81%	2%	7%
Red Lodge	81%	3%	3%

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

- 4.13 All areas have a similar public transport mode share at 2-3%. This reflects the poor and inconvenient service levels in the areas being considered. Walk and cycle commuting reflect the employment opportunities within 1 to 3 kms.
- 4.14 Lakenheath and Red Lodge have the highest car mode shares.
- 4.15 The Journey to Work data has also been used to identify the work destinations of trips which originate in the relevant wards. This has allowed a percentage distribution to be calculated which gives a broad indication as to the direction of travel, and therefore the routes which would most likely be affected by any increase in trips.

4.16 Table 12 shows the overall broad direction of travel for each area. For each area, the percentage distribution has been calculated based on the existing distribution from 2001 Census data for the associated ward for car driver. The results are shown in Table 13.

4.17 It should be noted that this is a very broad level of analysis, and that changes in employment locations since the data was collected in 2001 could have had an effect on the distribution. Similarly, as mentioned earlier in this report, the development of Red Lodge as a settlement since the 2001 Census was undertaken is likely to have had an impact on traffic distribution as well as mode split.

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Table 12 – Trip Distributions per Area

	Newmarket	Brandon	Mildenhall	Lakenheath	Red Lodge
North	A11 - Thetford A142 – Soham A1065 – Brandon / Lakenheath A1101 – Mildenhall / Lakenheath	A11 - Thetford A142 – Soham A1065 – Swaffham A1101 – Mildenhall	A11 - Thetford A142 – Soham A1065 – Brandon / Lakenheath A1101 – Cross country	A11 - Thetford A142 – Soham A1065 - Brandon B1112 – Cross country	A11 - Thetford A142 - Soham A1065 – Brandon / Lakenheath A1101 - Mildenhall
South	A11 - London B1061 – Haverhill	A11 - London A1065 - Lakenheath A142 - Newmarket A1304 – Newmarket B1106 – Bury St Edmunds B1085 – Cross country	A11 - London A142 - Newmarket A1304 – Newmarket B1085 – Cross country	A11 - London A142 - Newmarket A1304 - Newmarket B1085 – Cross country	A11 - London A142 - Newmarket A1304 - Newmarket
East	A14 – Bury St Edmunds	A1101 – Bury St Edmunds B1107 - Thetford	A14 – Bury St Edmunds A1101 – Bury St Edmunds	A14 – Bury St Edmunds A1101 – Bury St Edmunds	A14 – Bury St Edmunds A1101 – Bury St Edmunds
West	A14 – Cambridge	A14 – Cambridge	A14 - Cambridge B1102 – Fordham	A14 - Cambridge A1101 - Mildenhall	A14 - Cambridge
Central	Newmarket	Brandon	Mildenhall	Lakenheath	Red Lodge

Table 13 - Distribution of Vehicle Trips per Area based on 2001 Journey to Work Census Data

	Newmarket	Brandon	Mildenhall	Lakenheath	Red Lodge
North	20.96%	11.98%	31.58%	15.78%	23.37%
South	7.81%	26.09%	7.57%	8.95%	38.31%
East	4.62%	16.49%	8.95%	8.79%	1.50%
West	15.95%	5.02%	5.52%	14.38%	13.34%
Central	50.66%	40.42%	46.38%	52.10%	23.47%

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- 4.18 All areas show the highest percentage of trips to their respective central areas with the exception of Red Lodge.
- 4.19 Within the remaining four areas, there is still a significant difference percentage wise between trips to the central area of Lakenheath (52%) and trips to the central area of Brandon (40%). This is likely to be because of the presence of the airbase at Lakenheath which is a big employment centre. Brandon in comparison does not have a significant employer within the town.
- 4.20 With regards to Newmarket, after the trips to the town centre, the highest percentage of trips is to the north (21% mainly to Mildenhall and Lakenheath) and to the west (16% mainly to Cambridge).
- 4.21 Brandon has the highest percentage of trips (outside the centre) being to the south (26% to the airbases and Newmarket) and to the east (15% mainly to Bury St Edmunds).
- 4.22 Mildenhall has a low distribution of trips in all directions with the exception of the centre (46%) and the north (32%). The north encompasses trips to mainly to Lakenheath, as well as Brandon, and further afield.
- 4.23 For Lakenheath, over half (52%) of trips are within Lakenheath itself. After this, 16% are to the north, and 14% to the west. Brandon and Thetford are to the north, with Mildenhall the big employment attraction to the west.
- 4.24 Red Lodge has the most equal distribution of trips. The location of Red Lodge to the east of the A11 is such that there is good access to the strategic road network and centres which offer a higher level of employment.
- 4.25 These trip distributions have been applied to the trip generation (arrivals and departures) for the morning and evening peak hours shown. The results of this can be seen in Appendix B, where schematic diagrams for each area is presented. Some partial, traffic impact related, conclusions are drawn in the next Section.

Review of Areas

- 4.26 All results presented in Appendix B are based on allocating the dwelling allocations as discussed at the workshop held with FHDC, SCC and the Highways Agency on 12 November 2009.
- 4.27 The following remarks are intended to identify the main pressures resulting from each growth area and then consider the impact of the LDF growth aspirations over the whole district.
- 4.28 It should be noted that the trip rates and subsequent trip generation used are precautionary, based on the existing vehicle trip generation of dwellings in the appropriate Ward. They could be reduced, to a varying degree, by up to 20 percent:
- At Newmarket, there is considerable potential for reducing the level of car use, in traffic accessing the town, and for some of the Cambridge bound traffic;
 - At Brandon, there is limited opportunities to reduce car trip rates, unless a considerable investment was made in the overall urban infrastructure;
 - At Mildenhall, there will need to be a comprehensive, town wide, initiative to reduced car use, to reduce the traffic in the town centre from existing residents, since the proposed allocation is to the west of the town, and new longer distance traffic will need to pass through the town centre to access the A11;
 - Lakenheath and Mildenhall have the potential to reduce local car traffic through a comprehensive workplace travel plan for the airbases;
 - Red Lodge needs the planned community centre, and closer links to an improved rail service at Kennett, to reduce the level of car use at this growing 'dormitory estate'.
- 4.29 The analysis shows that growth in North East Newmarket would have a large impact at the A14/A142 junction, particularly in the morning peak as traffic leaves the sites for destinations towards Cambridge and Bury St Edmunds. There will also be a significant increase in traffic heading to destinations within Newmarket itself. Traffic heading out towards Cambridge (with a rail alternative) and traffic heading into Newmarket (with potential to use walk, cycle and bus modes) has significant potential to be targeted by a sustainable travel package.
- 4.30 The impact of any development in Brandon would be spread out throughout the road network, but would not appear to be significant at any key junction. It is acknowledged that there would be an increase in congestion in Brandon itself, however trips within Brandon could easily be targeted with a sustainable transport package to reduce any significant impact at this location.
- 4.31 The 2006 Study of the traffic problems in Brandon reached the following conclusions:
- The A11 dualling will probably remove up to a quarter of the traffic currently using the A1065;
 - A package of local safety and management improvement were recommended in any case;
 - All the major bypass Options have considerable construction and environmental cost implications;
 - The western relief road possibilities fitted best with the local development directions, but still had serious environmental impacts, and high construction costs.
- 4.32 All traffic generated in Mildenhall would impact on the King Street junction in central Mildenhall which is likely to cause significant delay at an already busy roundabout. Beyond Mildenhall, the majority of traffic will affect the A11 Fiveways junction, although recent analysis suggests that the A 11 improvement scheme should allow for the roundabout to safely accommodate the additional traffic at this location.
- 4.33 Based on the census data, a large proportion of traffic generated by growth at Lakenheath is likely to stay within Lakenheath and therefore only impact on the B1112. The junctions of the B1112 with the A1065, the A11 and the A1101 are likely to see some impact, especially traffic turning towards Mildenhall which could impact on the A1101, although this is unlikely to be significant. This is because the B1112 will form the minor arm at these junctions and depending on the time of day and the amount of traffic, queues may form. As part of the A11 Fiveways to Thetford proposals, the current staggered B1112/A11 junction will be closed, and the B1112 will run under the proposed dual carriageway without a junction.
- 4.34 As Red Lodge does not attract many trips within itself at present, both its junctions with the A11 will see an increase in traffic. However, employment centres to the south and west clearly have a bigger draw as more traffic is shown in the model to impact

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on the southern of the two A11 junctions. Consequently, any development at Red Lodge will have a greater impact on junctions 36 and 37 of the A14 rather than the A11 Fiveways junction.

- 4.35 If we consider the overall impact of the Forest Heath LDF Core Strategy housing allocations, it can be seen that there is likely to be a significant increase in traffic at the following key locations:
- 4.36 A 11 / A1101 Fiveways Roundabout – the provision of growth in Forest Heath will have a significant impact at this roundabout given its current layout. However, the Highways agency plans to upgrade the A11 Fiveways to Thetford. The A11 north of Fiveways will be dualled, the existing staggered junction with the B1112 will be removed, and local improvements to the geometry will be made to the roundabout to improve its operational efficiency. This, combined with appropriate sustainable transport measures, should deliver enough capacity to accommodate the growth outlined in the Forest Heath LDF Core Strategy. The junction could be signalised if necessary.
- 4.37 A 11 / A14 junction to east of Newmarket (junction 38) - Whilst there will be a significant increase in traffic to/ from the A11 to the A14, particularly in the AM peak, the layout of this junction consists of a lane gain for traffic joining the A14 westbound, and a lane drop for traffic joining the A11 northbound. Given this and the existing dual-3 layout on the A14 at this location, it is unlikely that any additional traffic generation will have an adverse impact on the operation of this junction, or on the A14 itself at this location.
- 4.38 A14/ A142 junction (Junction 37) - the provision of growth in Forest Heath will have a significant impact at this already congested junction and will have the potential to extend queues back onto the A14. Whilst sustainable transport initiatives will help to reduce both the proposed growth and exiting traffic levels at the junction, physical measures will also be required. This is discussed later in this report.

5. Transport Infrastructure Review

The Workshop

- 5.1 At an interim stage in the Study, a Workshop was held to review the initial impact findings, particularly the scope for encouraging walk, cycle and bus modes through the improvement of facilities. The Workshop provided opportunities to discuss existing problems, to review the schemes and initiatives currently being considered, to review the likely direction and scale of impact from the possible future developments, and to review the potential sources of funding for implementing improvements.
- 5.2 The wide ranging discussion has been summarised in Appendix C. In this Chapter, the findings of the Workshop are explored and developed in the context of three opportunities to encourage more sustainable travel patterns:
- Self- containment of the new residential developments;
 - Walk and cycle facilities linking the residential developments to the surrounding employment opportunities and community facilities; and
 - Bus services and facilities.

Broad Locations' Requirements

- 5.3 A high degree of transport self containment can be specified in the design brief for new developments. This needs to consider the phasing and ultimate capacity of the site and the relationship with neighbouring local and town centres. Design features which can assist self containment include:
- Appropriate frequently used community facilities – schools, healthcare, local retail and leisure facilities – integrated into the pedestrian circulation pattern;
 - Local delivery of less frequently used and specialist community facilities – library, specialist healthcare, young persons' activities – through a community hall; and
 - A proportion of the dwelling units to have integrated office/workshop/atelier 'live/work' accommodation.
- 5.4 The early delivery of these is important, to establish a local community focus and to offer options for

sustainable travel behaviour from the start. This usually is a problem, with facilities only delivered when the full development potential of the site has been realised, but out-travel habits already established. Larger developments have more opportunities to fund and deliver such design features. At present there are only limited proposals for mixed use within the Forest Heath District development allocations.

- 5.5 The full implementation of these design features, particularly a full range of schools, are considered to have the potential to reduce peak hour car travel by up to 5 percent. This is an approximate estimate, but is considered a cautious minimum.
- 5.6 The proposed areas of growth in North East Newmarket in particular and Mildenhall already have reasonable accessibility to facilities, as listed in Appendix A. Therefore, development at these locations would not require a certain critical mass to support new key facilities and could broadly rely on existing services with a few minor improvements.
- 5.7 The proposed areas of growth at Brandon and Red Lodge are not so well served with a full range of community facilities at present, and would benefit from a design brief including a strong self-containment focus. At Red Lodge, it is expected that a centre will be developed when environmental constraints have been mitigated.
- 5.8 Lakenheath is a special case, with an existing degree of self containment for service personnel, but limited facilities for other residents.

Walk and Cycle Facilities

- 5.9 As shown in Appendix A, the proposed areas of growth are within 3kms of their nearest town centres, except for the isolated Red Lodge area. This means that there is considerable potential for a shift to walk and cycle for a wide range of trips for all purposes.

Newmarket

- 5.10 It is considered that there are relatively few current barriers to cycling and walking in Newmarket, although the position of the growth area on the north east outskirts of the town means that walking to the town centre is unlikely to be a realistic option. However, facilities such as Tesco's, St Felix Middle

School and Newmarket Upper School are all within reasonable walking distance from the site. Given the scale of the proposed development, it is likely that this will be able to provide a number of services in its own right such as a primary school, doctors surgery, local shops, thus increasing the potential for internalisation within the site. The Oaks Business Park and Minton Enterprise Park are also within walking distance of the site.

- 5.11 Most of Newmarket is within cycle distance of the site, including the town centre and railway station. There already existing off road cycle routes along Exning Road towards the town centre which could be linked to the growth area via Willie Snaith Road and Studlands Park Avenue. This would also provide a cycle link from the growth area to the Oaks Business Park and Minton Enterprise Park.
- 5.12 Shared use and on carriageway facilities could be provided along Fordham Road to provide a more direct route to the town centre and station from the growth area. Facilities could also be provided to enhance cycle provision around the Clockhouse junction. Formal cycle routes and facilities should be provided between the town centre and the railway station to encourage multi-modal sustainable trips.
- 5.13 These facilities should provide increased network connectivity, and 'end to end' routes from the residential areas to the work and town centre areas. Secure cycle parking facilities need to be provided at the closest convenient locations to the town centre.
- 5.14 A parallel programme to control and manage car parking is also needed to support a shift to sustainable modes. This could include parking controls on public commuter parking and focussing parking tariffs to dissuade long stay parkers.

Brandon

- 5.15 There is a limited network of cycle facilities in Brandon, comprising of an off road facility along Victoria Avenue and to the south of The Glade Primary School. The existing facilities do not form a network between the town centre, employment areas and residential dwellings. Whilst most key services are within walking distance, the linear shape of the settlement may reduce the attractiveness of walking, especially from the outer residential areas.

- 5.16 Given this, the following measures could be explored to provide linkages between existing foot and cycle provision and increase accessibility by these modes to key services and workplaces.

- 5.17 Potential intervention measures could include the following:

- Provide an advisory cycle lane on London Road between Norwood Road and St Peters Place. This will increase connectivity between the Brandon Industrial Estate, the town centre, and residential dwellings to the west of the town.
- Provide an advisory cycle lane on the A1065 High Street to the railway crossing. This will provide a cycle route between the town centre and the railway station.
- Provide advanced stop lines on all four arms of the London Road/ Church Road and High Street/ London Road junction to assist cyclists.
- Provision of facilities on Bury Road, including:
 - Provide defined cycle route from School Lane to signal controlled crossing of London Road/ High Street. Convert existing Pelican crossings to Toucan;
 - Provide splitter island in George Street to enable access into School Lane via a new dropped kerb at Beavor Lane;
 - Relocate pelican crossing on Beavor Lane to new location south of entry into School Lane and convert to Toucan. Widen footways and convert to cycle tracks. This will provide a link to Forest Primary School and the library;
 - From Elizabeth Avenue to Warren Close convert pelican crossing to Toucan and widen footway to convert to cycle track;
 - Bury Road junction with Rattlers Road - Provide new section of cycle track to facilitate crossing cycle movements between Green Lane and Rattlers Road;

A combination of the above schemes on Bury Road will increase connectivity between the south and east of the town and the town centre.

- Widen existing footway on Green Road to become an off road cycle facility. This will provide a route from the residential areas in the south east of the town.
- Widen existing footway on Gas House Drove and St Benedict's Road to create off road cycle facility. This

will provide a route from the residential areas in the north east to the town centre.

- 5.18 These facilities together with appropriate interlinks should provide increased network connectivity, and 'end to end' routes from the residential areas to the employment and town centre areas. Secure cycle parking facilities need to be provided at the closest convenient locations to the town centre and the station.

Mildenhall

- 5.19 There is already network of walk / cycle facilities in the south west and north east of the town itself, although there are a number of links which are either missing or require improvement. Suffolk County Council suggested the existing facilities do not form a network between the town centre, employment areas and residential dwellings.
- 5.20 Given this, the following could be explored to provide linkages between existing foot and cycle provision and increase accessibility by these modes to key services and workplaces.
- 5.21 Potential intervention measures could include the following:
- Provide shared use or on road facilities on the A1101 North Terrace/ Field Lane and Folly Road. This will provide a link between the town centre and Mildenhall Industrial Estate to the north. This will also provide a link to the existing off road facilities towards Beck Row.
 - Provide shared use or on road facilities on College Heath Road, linking the existing off road facilities on College Heath road with the Mildenhall Industrial Estate.
 - Provide shared use or on road facilities on Kingsway A1101 between the Kings Street roundabout and the A11 Fiveways roundabout. This will provide a link to the existing facilities on College Heath Road, the Dome Leisure Centre.
- 5.22 These facilities should provide increased network connectivity, and 'end to end' routes from the residential areas to the work and town centre areas. Secure cycle parking facilities need to be provided at the closest convenient locations to the town centre.

Lakenheath

- 5.23 There are currently no cycle routes within Lakenheath, however given its compact size, there would appear to be no barriers to on carriageway cycling and walking around the town. As part of any development, the provision of formal cycle facilities would help to encourage internal trips within Lakenheath, however given the relative lack of services in the town, the impact of such measures is only likely to be limited.

Red Lodge

- 5.24 Given the significant level of development that has recently occurred in Red Lodge, there are a series of existing walk and cycle routes within the development. As the development is built out and more key services provided as part of developer funded S106 agreements, then the further provision of these facilities should allow a degree of internalisation to be present. Specific facilities to encourage cycle access to an enhanced rail service at Kennett would also be of potential value.

Bus Services and Facilities

Newmarket

- 5.25 As described in Appendix A, there is a number of existing bus services in Newmarket with about four services per hour to Cambridge taking between 30 – 60 minutes, combined with hourly train services to Cambridge, Bury St Edmunds and Ipswich. Growth in Newmarket is therefore strategically placed to make use to make good use of the existing public transport links to Cambridge, reducing the impact of car borne commuting.
- 5.26 Routes 10 and 12 which include the Cambridge and Bury services pass close to the growth area and should be capable of being extended into any development. These services will provide a reasonable level of service to non-car available travellers, but would fall short of providing a convenient service likely to attract car users making short trips within the town.
- 5.27 It is likely that the proposed scale of development may be able to justify additional bus services, or provide significant improvements to improve existing ones. A higher level of frequency is needed to link

directly between the development, existing employment areas in Newmarket, Newmarket town centre and railway station.

- 5.28 Features to make bus travel more attractive could also be funded, including the provision of bus priority measures on Exning Road/Mill Hill (southbound) and Bury Hill (westbound).

Brandon

- 5.29 As described in Appendix A, the existing bus service level in Brandon primarily comprises a series of local services, however their routes and timetables are limited with no services operating at least hourly. The key existing service is runs between Mildenhall, Brandon and Thetford every other hour. There is also a Brandon town service which runs hourly during the middle of the day. While this provides a minimal level of service to non-car available travellers, it falls well short of a convenient service likely to attract existing car users.
- 5.30 There is a railway station at Brandon operating an hourly service between Cambridge and Norwich, however it is located on the northern outskirts of the town and it is only served by the Brandon town bus service and thus is not as attractive as it could be to commuters.
- 5.31 Penetration of bus routes into any new residential areas is needed. It is unlikely that the proposed scale of development will be able to justify a completely new bus service, but should be able to improve existing ones. A higher level of frequency (at least hourly for both services for the whole day with an increase in frequency during the peak periods) is needed to link directly between the main centres of residential development, employment areas, town centre, as well as key employment destinations such as Mildenhall and Thetford. An attractive integrated public transport system linking the town with the railway station will increase the attractiveness of the railway to commuters and reduce the pressure on the surrounding road network. An increase in frequency of the town service will also reduce the amount of pressure on the road network from internal Brandon trips.

Mildenhall

- 5.32 As described in Appendix A, the existing bus service level in Mildenhall primarily comprises a series of local services, however their routes and timetables are limited. The key existing service is the hourly service between Mildenhall and Newmarket. While this provides a minimal level of service to non-car available travellers, it falls well short of a convenient service likely to attract existing car users. Indeed, this service does not extend up to the existing industrial areas within Mildenhall and this would only serve trips between Mildenhall and Newmarket.
- 5.33 Penetration of bus routes into any new residential areas is needed. It is unlikely that the proposed scale of development will be able to justify a completely new bus service, but should be able to improve existing ones. A much higher level of frequency (at least two to three per hour) is needed to link directly between the main centres of residential development, employment areas within the town such as the Mildenhall Industrial Estate and airbase, and the town centre, as well as key employment destinations such as Newmarket and Lakenheath air base. To meet these objectives, a town shuttle service during the peak hours could be provided linking with Lakenheath.

Lakenheath

- 5.34 As described in Appendix A, the existing bus service level primarily comprises services between Mildenhall, Brandon and Thetford and Bury St Edmunds, Mildenhall and Lakenheath running every other hour. This provides a very basic level of service to non-car available travellers. As discussed earlier in this report, there is a large amount of commuting traffic between Mildenhall and Lakenheath associated with the two air bases. A shuttle bus service associated with the proposed growth in Mildenhall introduced as part of a coordinated travel planning exercise, could help to reduce commuting trips between these two areas.

Red Lodge

- 5.35 As described in Appendix A, the existing bus service level in Red Lodge primarily comprises a single service between Newmarket and Mildenhall, running hourly, passing Kennet railway station

approximately 4 kms to the south (a 10 minute bus journey). At present, alternate trains on the hourly services between Ipswich and Cambridge stop at Kennett.

- 5.36 Given the scale of committed and proposed development at Red Lodge, it is likely that the proposed scale of development will be able to justify either a new bus service, or significantly improve existing ones. A much higher level of frequency (at least two to three per hour) is needed to link directly between the main centres of residential development and the proposed centre, as well as key employment destinations such as Newmarket and the railway station at Kennet to provide access to Cambridge and Ipswich. Bury St Edmunds.

Impacts on existing road infrastructure & New road infrastructure to support the proposed broad locations of development

- 5.37 Detailed work on background traffic growth has not been undertaken as part of this Study, and definitive traffic impact assessments will be needed to quantify the likely problems. Based on the connection assumptions given in Chapter 4, and the proposed trip generation and distributions, AECOM has identified the following locations where infrastructure improvements may need to be made.

Newmarket

- 5.38 Newmarket at present suffers under the high level of daily vehicle movements with significant out commuting towards Cambridge. Following consultation with Suffolk County Council, internally Newmarket has few issues which cannot be addressed through traffic calming measures. Measures could include:

- Signalisation of the Studlands Park avenue junction with the B1103 Exning Road. Bus priority could also be provided at this junction.
- Signalisation of the B1103 Mill Hill/ Rowley Drive junction.
- Significant works have already been undertaken at the Clock tower junction to ease congestion, however minor tweaks could be made if necessary to increase capacity.

- 5.39 The main issue is that Newmarket is particularly reliant on junction capacity at the A14 (primarily the A142 junction) as the main route for car journeys from the town. Whilst sustainable measures will be able to reduce the impact of both existing and proposed development at the A14 junctions, it has been acknowledged that works will need to be undertaken at the A14/ A142 junction to accommodate growth in Newmarket. Whilst proposed growth in Newmarket will contribute to the existing problems at this junction, it must also be noted that growth from developments outside of Forest Heath impact on this junction as well, particular those in east Cambridgeshire (Soham and Ely).

- 5.40 Measures will need to be provided to mitigate the impact of the development at this junction. Such measures could include:

- Signalisation of the junction, including the slip roads – this by itself is likely to significantly improve the situation at the junction in the short term, but will also need to be combined with sustainable transport measures to minimise the impact of additional traffic at the junction and make this a sustainable approach in the long term.
- Ramp metering – the provision of ramp metering from the proposed development and from the A142 north. The provision of such facilities could encourage the use of public transport provided that adequate investment has been made to make it a viable alternative.

- 5.41 A third option could be to redesign the junction as a whole and provide a second bridge over the A14(T). Such a scheme is likely to be beyond what could be considered reasonable mitigation measures for a single developer, but could be considered as a possibility of being funded through developer contributions over the LDF period through the allocations over the whole district.

Brandon

- 5.42 Brandon is centred on the fork of the A1065, B1106 and B1107. Discussions with SCC and FHDC suggest that the current road network is under strain from the high level of vehicle movements and significant levels of commuting towards Thetford and Mildenhall. The network also becomes congested during the summer holiday periods, especially if there are problems on the A11. It is understood that a relief road running to the north west of Brandon has been discussed, although there are currently no central funds in place to support such measures. However, the proposed dualling of the A11 between Fiveways and Thetford is expected to reduce the amount of traffic using Brandon by up to 25 percent. This will however need to be assessed and will determine the level of any physical measures that may be necessary to facilitate development
- 5.43 Given the relatively small scale growth proposed in the LDF for Brandon, it is unlikely that the existing highway infrastructure would prove restrictive, especially if appropriate measures are implemented to encourage sustainable travel around the town. Some limited traffic measures may need to be funded along the A1065 in order to relieve the worst affected areas, although the scale of this is unlikely to prove prohibitive.
- 5.44 Any aspirations for larger scale development will either need to consider a substantial investment in sustainable transport measures, or be of a critical mass in the longer term to enable the funding of a relief road scheme.

Mildenhall

- 5.45 Mildenhall has significant levels of out commuting and the current road network is under strain with existing junction capacity issues. The provision of a bypass to ease congestion problems in the town centre has been considered in the past, and the investment in such a feature is likely to be needed at some stage in the future to support continued further growth in the absence of major travel planning initiatives.
- 5.46 The costs, benefits and feasibility of full or partial relief road segments and their possible integration

with longer term land allocations needs to be explored.

- 5.47 The provision of management schemes within the constrained town centre could provide some short term improvements.

Lakenheath

- 5.48 Following discussions with Suffolk County Council and the Highways Agency, it has been confirmed that there are no significant highway related issues in Lakenheath which will need to be addressed to allow the allocation of dwellings as part of this LDF.

Red Lodge

- 5.49 Following discussions with Suffolk County Council and the Highways Agency, it has been confirmed that there are no significant highway related issues in Red Lodge which will need to be addressed to allow the allocation of dwellings as part of this LDF. However, the lack of ramps between the A11 north and the A14 east at the J38 towards Bury St Edmunds may need to be addressed in the future.

Liaison with Cambridgeshire County Council

- 5.50 Forest Heath has a border with Cambridgeshire County, and with East Cambridgeshire District, and there are several issues concerning common transport links. Newmarket in particular is almost completely surrounded by the neighbouring authorities' areas.
- 5.51 A meeting was held between AECOM and Cambridgeshire County Council (CCC) Transport Policy and Strategy officers on Wednesday 18 November.
- 5.52 The main focus of the ECDC LDF growth scenario is on the market towns of Ely and Soham, which are both on the north south A142 route linking to the A14 just north of Newmarket. The full longer term growth scenario is for some 5,600 additional dwellings to be allocated to the two market towns in the period 2001 to 2025. Allowing for recent completions, this may imply some 2,000 to 3,000 further dwellings 2010 to 2025. CCC considers the A142 route within Cambridgeshire to generally be performing well, with an acceptable safety record and with an appropriate predicted level of service, with the exception of the low bridge / level crossing at Station Road Ely.
- 5.53 The main concern of Cambridgeshire County Council relating to growth in the Newmarket area would be that if the level of service of the A14 / A142 Junction 37 north of Newmarket becomes problematic, traffic between Soham and Cambridge would divert from the A14/A142 and would probably use the unsuitable B1102 through Burwell.
- 5.54 Any traffic between Ely and Soham accessing the A14 to travel east to Bury St Edmunds is largely constrained to the A142 J37, since the alternatives are longer minor country routes.
- 5.55 While CCC has a general policy stance to encourage moves away from local car use to more sustainable modes, travel patterns in the rural area in the east of the county are not expected to be significantly affected in the short term.

Costs and affordability

- 5.56 The following section draws on the analyses and judgements made, and summarises the proposed transport facilities judged necessary to support the safe, convenient and sustainable connection of the broad locations to the existing networks and land uses, without detriment to the existing infrastructure. Expected distributor roads accessing and crossing developments are excluded, since they are an integral part of the development layout. The costs are highly speculative and indicative, based on unit costs from recent work, but without any specific local validation. They are used to suggest a range of per dwelling contribution which would be required.
- 5.57 The following provisional conclusions on costs and affordability can be drawn from the summaries:
- The broad locations are all feasible – there are no 'showstoppers';
 - The per dwelling cost estimates are all relatively low – ranging from £0.83K at Red Lodge, to £1.58K at Mildenhall – these are all seen as relatively low in the regional context;
 - The Newmarket allocation is seen as cost effective, but only a notional allowance has been made for additional costs of junction improvements at the A14 J37;
 - The Brandon allocation is relatively remote from employment opportunities, and is likely to be heavily dependent on car access. The limited LDF allocation will neither require, nor be of a scale to fund any Brandon relief road;
 - The estimated per dwelling cost at Mildenhall, while still fairly low, is marginally higher than the other Forest Heath allocation costs. This is because of the suggested need for community wide travel planning, and extensive town centre management measures. Both these are judged necessary to accommodate the longer distance traffic from the new allocation which will need to traverse the town centre to access the Fiveways junction;
 - The Red Lodge per dwelling cost, while relatively low, is predicated on the assumption that the costs of developing the maturing infrastructure, and of the new centre, will be borne directly by the developers.

- 5.58 While some contribution (perhaps £0.25M per annum) can be assumed to continue to be spent on local safety and sustainable transport schemes from SCC funding sources, the overwhelming majority of funding will need to come from developers' contributions. The 'per dwelling' figures given in the Site cost tables can be interpreted as upper bound figures; there is some limited double counting between Sites; some possible cost sharing with employment uses, and also the possibility of developers' contributions from smaller infill developments not considered individually

Newmarket (1,640 dwellings to the north)

	Proposed facility	Indicative cost (£000) prior to occupation
Connection assumption	Developer is expected to improve the A142 as part of the area access, and provide two exits from the residential area, to co-ordinate with bus access, and potentially control vehicle egress.	Part of the development layout cost
Internal trip assumption	The area lies close to the Newmarket town centre, and so no particular mixed use arrangements are needed.	
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with new bus services and cycle routes.	£200
Walk/cycle links to neighbouring communities and the town centre	Opportunistic improvements to existing walk and cycle networks, including Pelican / Pegasus crossings, and development of the walk and cycle routes using Snailwell Road.	£600
Bus service enhancement	Extension and reinforcement of the current routes to provide a high frequency urban service link to the centre of Newmarket and the rail station.	Revenue support over the first five years of occupation totalling £200
Traffic management measures	Bus priority facilities and traffic management along the A142 into the centre of Newmarket	£400
New road infrastructure	May be some requirement for management at the A142/A14 junction.	£1,000 (indicative)
TOTAL		£2,400
Per dwelling		£1.46

Brandon (760 dwellings to the west)

	Proposed facility	Indicative cost (£000) prior to occupation
Connection assumption	Developer to provide an internal distributor road linking to existing roads to the south and east.	Part of the development layout cost
Internal trip assumption	Limited internal opportunities – the development will not have specific mixed uses, and will provide support to the existing commercial centre of Brandon.	
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with wayfinding	£100
Walk/cycle links to neighbouring communities and the town centre	Opportunistic improvements to existing walk and cycle networks, linking through the Leisure Centre to Brandon centre and the Brandon Industrial Estate. Further support to the leisure cycling facilities.	£300
Bus service enhancement	Extension and reinforcement of the existing routes, to provide a high frequency urban service to the town centre and the railway station, with higher frequencies to Mildenhall and Lakenheath.	Revenue support over the first five years of occupation totalling £300
Traffic management measures	Some safety and crossing facilities.	£400
New road infrastructure	None	
TOTAL		£1,100
Per dwelling		£1.45

Mildenhall (1,330 dwellings to the west)

	Proposed facility	Indicative cost (£000) prior to occupation
Connection assumption	Developer to provide a distributor road connecting to James Carter Road/ Hampstead Avenue in the north, and to West Row Road to the south.	Part of the development layout cost
Internal trip assumption	The design brief should allow for some mixed use and live/work units	Part of the development layout cost
Smarter Choices campaign	Information throughout the existing and new residential areas to reduce short distance car trips to the town centre, by diverting them to convenient more sustainable alternatives.	£500
Walk/cycle links to neighbouring communities and the town centre	Improved radial links to the town centre.	£300
Bus service enhancement	Extension and improvement to the existing bus services to provide frequent links to the town centre and to Lakenheath.	Revenue support over the first five years of occupation totalling £300
Traffic management measures	Extensive improvements will be needed in and around the town centre.	£1,000
New road infrastructure	The current allocation is expected to be managed by a shift to less short distance car use. Any subsequent increase in allocation to the west is expected to trigger the need for some form of relief to the town centre traffic circulation.	
TOTAL		£2,100
Per dwelling		£1.58

Lakenheath (600 dwellings to the north)

	Proposed facility	Indicative cost (£000) prior to occupation
Connection assumption	Direct connection to the B1112 is assumed.	
Internal trip assumption	No significant internal mixed use anticipated.	
Smarter Choices campaign	Targeted information for new dwellings and schools.	£100
Walk/cycle links to neighbouring communities and the town centre	Some improvements to the walking facilities – the town is small and self contained. Limited requirement for cycle facilities.	£200
Bus service enhancement	More frequent connections to Mildenhall, possibly extending to Brandon and Newmarket, are required on the B1112. The potential patronage for a weekday service to Lakenheath should be explored – if viable, it would require a bus connection..	Revenue support over the first five years of occupation totalling £200
Traffic management measures	Some minor pedestrian and safety management measures across the B1112 will be required.	£200
New road infrastructure	None.	
TOTAL		£700
Per dwelling		£1.17

Red Lodge (1,200 dwellings to the south))

	Proposed facility	Indicative cost (£1,000) prior to occupation
Connection assumption	Further extensions to the Red Lodge development will connect to the existing residential roads, and the B1085 (old A11).	Part of the development layout cost
Internal trip assumption	The design brief should allow for some mixed use and live/work units. It is assumed that the new centre will be developed within Red Lodge.	Part of the development layout cost
Smarter Choices campaign	Targeted information for new dwellings and schools, co-ordinated with wayfinding	£200
Walk/cycle links to neighbouring communities and the town centre	Walk and cycle links (and possibly busways) are required through the development, linking to the proposed centre, and providing links to Kennett rail station.	Part of the development layout cost
Bus service enhancement	As Red Lodge matures and consolidates, it will require direct fast links to Newmarket and Mildenhall, adapted from the existing 400/401 route.	Revenue support over the first five years of occupation totalling £300
Traffic management measures		
New road infrastructure	With further development of Red Lodge there may be a need for some limited improvements at the A11/ B1085 junction south of Red Lodge.	£500
TOTAL		£1,000
Per dwelling		£0.83

Conclusions

Conclusions

- 6.1 This review of the Forest Heath District LDF residential land allocations has provided an initial evidence base which shows that the allocations are all feasible in transport terms, with relatively modest transport infrastructure and facilities requirements.
- 6.2 Apart from the development on the edge of Newmarket, all the allocations can be characterised as relatively poorly matched with existing nearby employment opportunities. Efforts will be required to foster rail links to Cambridge where appropriate.
- 6.3 At Newmarket the proposed development can be managed in a sustainable way, with manageable impacts on the town and the trunk road. The town as a whole needs to be involved in the shift to lower car use. A more detailed traffic impact study will be required to design the required improvements at the A14 J37, but these are expected to be manageable in the medium term without major infrastructure changes.
- 6.4 At Brandon the proposed modest allocation is manageable, but there is little incentive to lower car use. Any longer term much larger allocation is likely to require a stronger community master planning exercise to create a revitalised town.
- 6.5 At Mildenhall the allocation to the west will cause further pressure on the town centre, and require comprehensive town wide initiatives to lower car use generally. In the absence of local new employment opportunities, the new residential area will be looking to Newmarket and Bury St Edmunds for employment.
- 6.6 At Lakenheath the relatively modest allocation can be managed with limited intervention, but there is scope to encourage more sustainable travel patterns more generally, by providing convenient bus links. This could benefit from the active involvement of the dominant RAF/USAFE employer in the area.
- 6.7 Red Lodge requires the planned new community centre for routine shopping, education, and community facilities needs as the residential areas mature and expand. The potential to strengthen the links to an enhanced rail service at Kennett should be explored.

Appendix A – Accessibility to Facilities

Appendix A – Accessibility to Facilities

Appendix A – Accessibility to Facilities contains the following:

- Bus and rail timetable information for each area;
- Key services for each broad direction of growth;
- Plans for each area showing the broad directions of growth and the location of key services

Newmarket Key Services

	Within 1km	Within 3km
Post Offices	-	Newmarket
Middle Schools	St Felix CEVC Middle School	Scaltback Middle School
Upper Schools	Newmarket Upper School	-
Doctors' Surgeries	-	Oakfield Surgery Orchard House Surgery The Rookery Medical Centre
Supermarkets	Tesco Co-operative	Waitrose

Brandon Key Services

	Within 1km	Within 3km
Post Offices	Brandon Town Street	-
Middle Schools	Breckland Middle School	-
Upper Schools	-	-
Doctors' Surgeries	Brandon Medical Practice Dr Hadley-Brown & Partners The Forest Group Practice	-
Supermarkets	Aldi Tesco Metro	-

Mildenhall Key Services

	Within 1km	Within 3km
Post Offices	Mildenhall	-
Middle Schools	Riverside Middle School	College Heath Middle School
Upper Schools	-	Mildenhall College of Technology
Doctors' Surgeries	Dr Hutton & Hopkinson Market Cross Surgery	-
Supermarkets	Co-operative Sainsburys	-

Lakenheath Key Services

	Within 1km	Within 3km
Post Offices	Lakenheath	-
Middle Schools	-	-
Upper Schools	-	-
Doctors' Surgeries	-	Dr Daley & Partners
Supermarkets	Co-operative	-

Red Lodge Key Services

	Within 1km	Within 3km
Post Offices	-	-
Middle Schools	-	-
Upper Schools	-	-
Doctors' Surgeries	Dr Hutton & Hopkinson	-
Supermarkets	-	-

Appendix A 1– Newmarket Bus and Rail Services

Number	Route	Days of Operation	Hours of Operation	Comment
12	Ely – Soham – Newmarket - Cambridge	Monday to Sunday	Hourly (4 per day on a Sunday)	Bus links to central Newmarket and bus station. Not many services link to rail station. Sunday service on one route. No purely urban services
11	Cambridge – Newmarket – Bury St Edmunds	Monday to Saturday	Hourly	
10 / 10A	Cambridge - Newmarket	Monday to Saturday	Half hourly	
400 / 401	Newmarket - Mildenhall	Monday to Saturday	Approx hourly	
17	Newmarket – Fulbourn – Cambridge – Fen Estate	Monday to Saturday	Three per day	
46 / 47	Horseheath – Cheveley - Newmarket	Monday to Friday	Approx two to four per day	
225	Haverhill - Newmarket	Monday to Saturday	Approx four per day	
311 / 312	Bury St Edmunds – Newmarket - Exning	Monday to Saturday	Approx every other hour	Regular rail service.
Rail	Ipswich - Cambridge	Monday to Sunday	Hourly (Mon to Sat) Every other hour (Sun)	

Appendix A 2 – Brandon Bus and Rail Services

Number	Route	Days of Operation	Hours of Operation	Comment
200 / 201	Mildenhall – Brandon - Thetford	Monday to Saturday	Approx every other hour	Bus serves main road through Brandon. Some routes divert into residential areas. Many individual services, but at low frequency.
R1	Brandon Town Service	Monday to Saturday	Hourly during middle of day	
25	Mundford - Norwich	Saturday	One per day	
30	Bury St Edmunds – Elveden – Brandon - Mundford	Wednesday	One per day	
28 / 40	Thetford – Brandon – King's Lynn	Monday to Saturday	Approx two per day	
332 / 333	Bury St Edmunds - Thetford	Monday to Saturday	Approx three per day	Rail station served by only one frequent bus service.
Rail	Cambridge - Norwich	Monday to Sunday	Approx hourly	

Appendix A 3 – Mildenhall Bus Services (no rail services)

Number	Route	Days of Operation	Hours of Operation	Comment
200 / 201	Mildenhall – Brandon - Thetford	Monday to Saturday	Approx every other hour	Reasonable bus service to Newmarket.
355 / 356	Bury St Edmunds – Mildenhall - Lakenheath	Monday to Saturday	Approx every other hour	
400 / 401	Newmarket - Mildenhall	Monday to Saturday	Approx hourly	

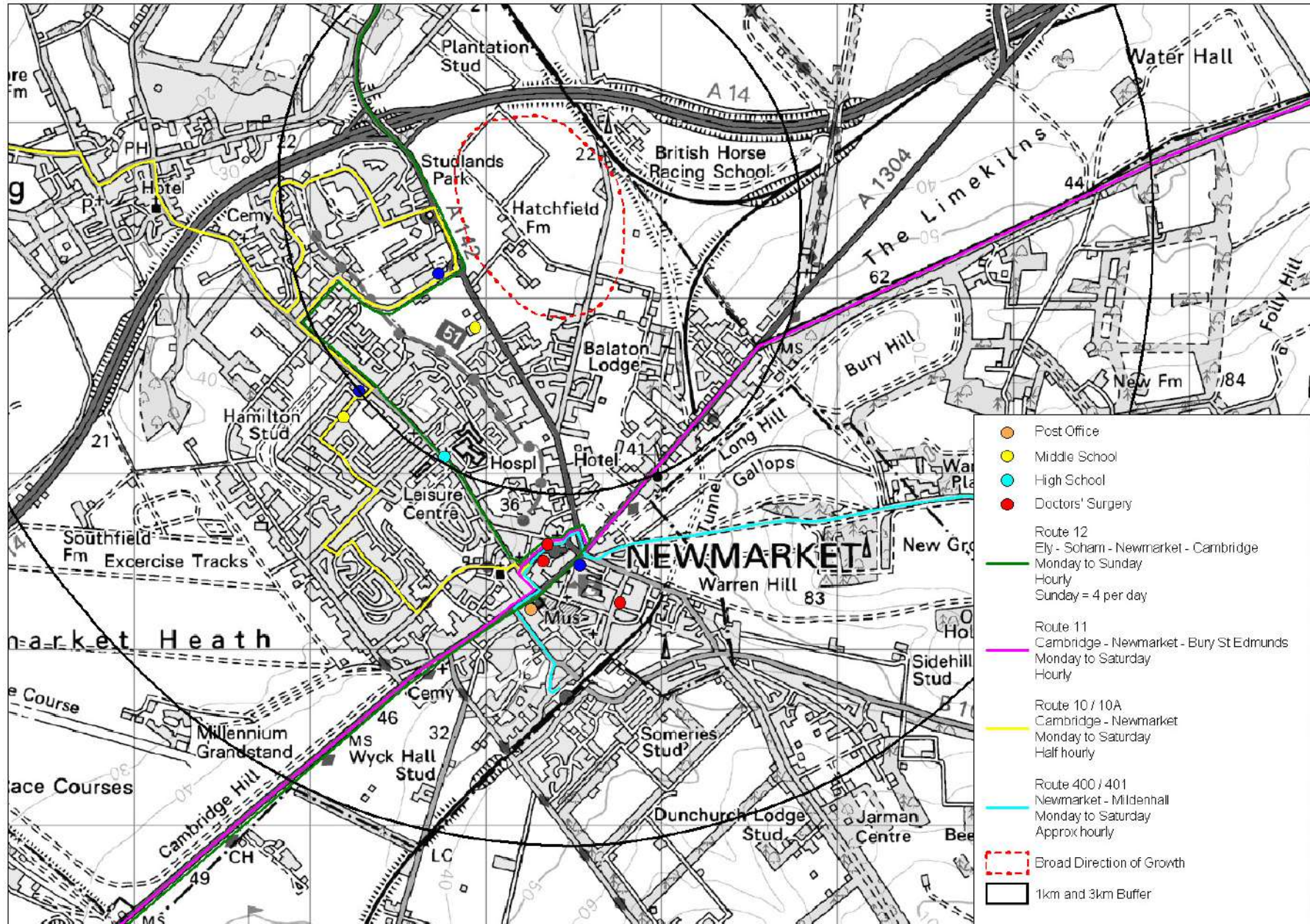
Appendix A 4 – Lakenheath Bus and Rail Services

Number	Route	Days of Operation	Hours of Operation	Comment
200/201	Mildenhall – Brandon - Thetford	Monday to Saturday	Approx every other hour	Bus links to key centres in area but frequency is poor. No Sunday service.
355 / 356	Bury St Edmunds – Mildenhall - Lakenheath	Monday to Saturday	Approx every other hour	
Rail	Cambridge / Peterborough - Norwich	Saturday and Sunday	A few trains stop at the weekends	No weekday services.

Appendix A 5 – Red Lodge Bus and Rail Services

Number	Route	Days of Operation	Hours of Operation	Comment
400 / 401	Newmarket - Mildenhall	Monday to Saturday	Approx hourly	Reasonable service for size although limited destinations served. No Sunday service.
Rail (at Kennett station)	Ipswich - Newmarket	Monday to Saturday	Every other hour	Potential to double the frequency if demand justifies

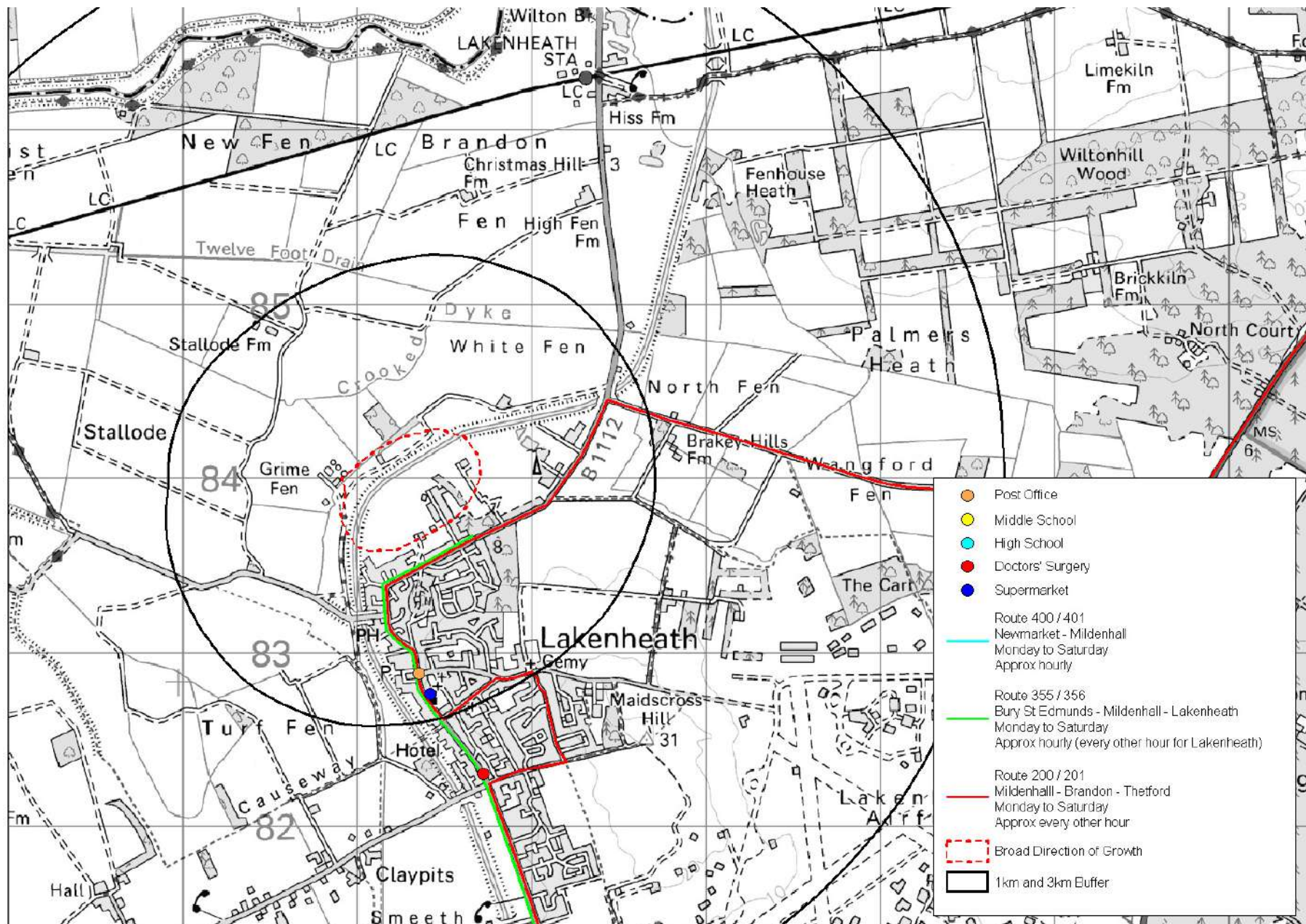
Appendix A 6 – Newmarket Key Services



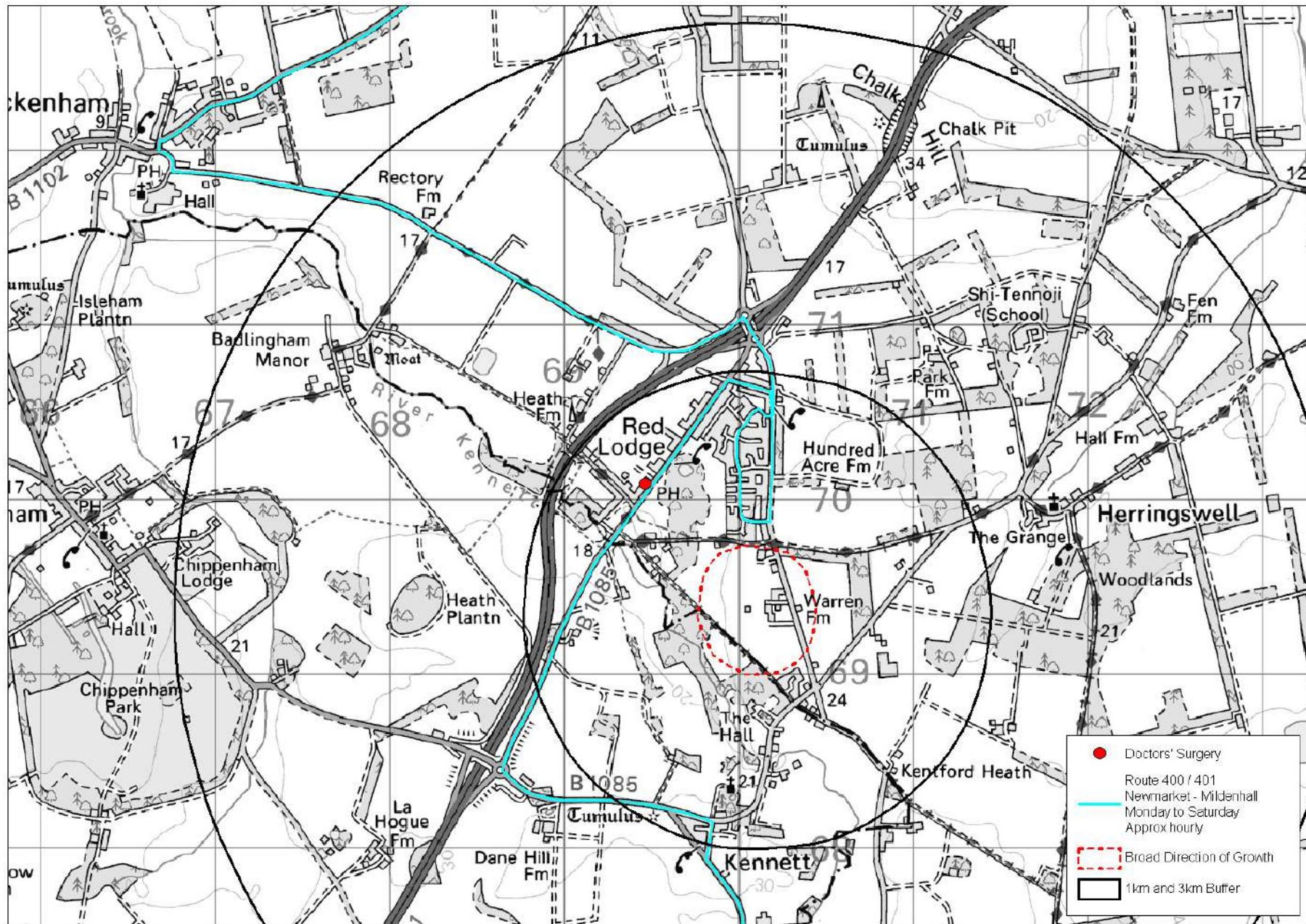
Appendix A 7 – Brandon Key Services







Appendix A 10 – Red Lodge Key Services



Appendix B – Traffic Impact Analysis

Trip Generation Methodology

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

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

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

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

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

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

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

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

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

Source: Table 4.1 of the National Travel Survey

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

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

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

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

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

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

Table B2 – Trip Purpose Split during AM and PM Peak

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

Source: Table 8.2 of DfT Focus on Personal Travel

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

Number of weekday peak trips per site =

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

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

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

Trip Distribution

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

Newmarket Trip Distribution

Direction	Route Assumption
Eastbound (towards Ipswich)	A142 Fordham Road to A14 (junction 37) to A14 east
Southbound (towards London)	A142 Fordham Road to A14 (junction 37) to A14 west to A14 (junction 36) to A11
Southbound (towards Haverhill)	A142 Fordham Road to High Street to B1061 Dullingham Road south
Northbound (towards Thetford)	A142 Fordham Road to A14 (junction 37) to A14 east to A14 (junction 38) to A11 to A11 Fiveways to A11
Northbound (towards Ely)	A142 Fordham Road to A14 (junction 37) to A14 Fordham Road
Westbound (towards Cambridge)	A142 Fordham Road to A14 (junction 37) to A14 west
Town Centre	A142 Fordham Road to High Street

Brandon Trip Distribution

Direction	Route Assumption
Eastbound (towards Thetford)	B1107 Thetford Road east
Southbound (towards Bury St Edmunds)	B1106 Bury Road south
Southbound (towards London)	B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 36) to A11
Southbound (towards Newmarket)	50% traffic: B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road south 50% traffic: B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A11 south to A14 (junction 38) to A1304 Bury Road
Southbound (cross country)	All traffic: B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A11 south to B1085 Dane Hill Road south
Southbound (towards)	B1106 Bury Road north to Rattler's Road north to A1065 London Road south

Lakenheath)	
Northbound (towards Swaffham)	B1106 Bury Road north to A1064 High Street
Northbound (toward Mildenhall)	B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A1101 north
Westbound (towards Cambridge)	B1106 Bury Road north to Rattler's Road north to A1065 London Road south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west
Town Centre	B1106 Bury Road north

Mildenhall Trip Distribution

Direction	Route Assumption
Eastbound (towards Bury St Edmunds)	West Row Road to A1101 Kingsway to A11 Fiveways to A1101 east
Eastbound (towards Ipswich)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to back roads to link to A14
Southbound (towards London)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 36) to A11
Southbound (towards Newmarket)	50% traffic: West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road north 50% traffic: West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to A14 (junction 38) to A1304 Bury Road
Southbound (towards cross country)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to B1085 Dane Hill Road south
Northbound (towards Thetford)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 north
Northbound (towards Brandon)	West Row Road to A1101 Kingsway to A11 Fiveways to A1065 north
Northbound (towards Ely)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road north
Westbound (towards Cambridge)	West Row Road to A1101 Kingsway to A11 Fiveways to A11 south to A14 (junction 38) to A14 west
Town Centre	West Row Road to A1101 Kingsway

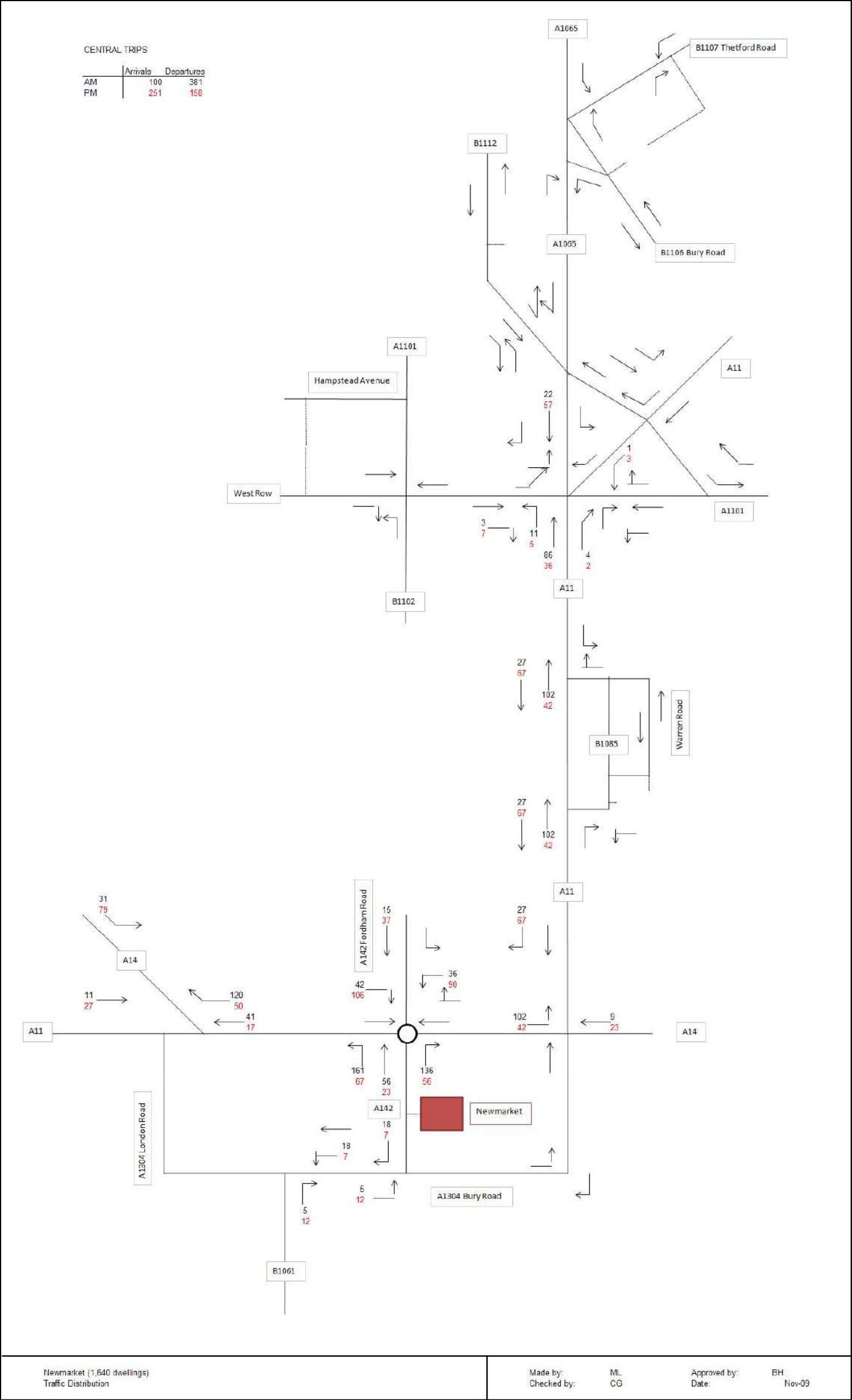
Lakenheath Trip Distribution

Direction	Route Assumption
Eastbound (towards Bury St Edmunds)	B1112 Station Road south to A1065 south to A11 Fiveways to A1101 east
Eastbound (towards Ipswich)	B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to back roads to link to A14
Southbound (towards London)	B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 36) to A11
Southbound (towards Newmarket)	50% traffic: B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road north 50% traffic: B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to A14 (junction 38) to A1304 Bury Road
Southbound (towards cross country)	B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to Dane Hill Road south
Northbound (towards Whittington)	B1112 Station Road north
Northbound (towards Thetford)	B1112 Station Road south to A11 north
Northbound (towards Brandon)	B1112 Station Road south to A1065 north
Northbound (towards Ely)	B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road north
Westbound (towards Cambridge)	B1112 Station Road south to A1065 south to A11 Fiveways to A11 south to A14 (junction 38) to A14 west
Westbound (towards Mildenhall)	B1112 Station Road south to A1065 south to A11 Fiveways to A1101 west
Town Centre	B1112 Station Road south

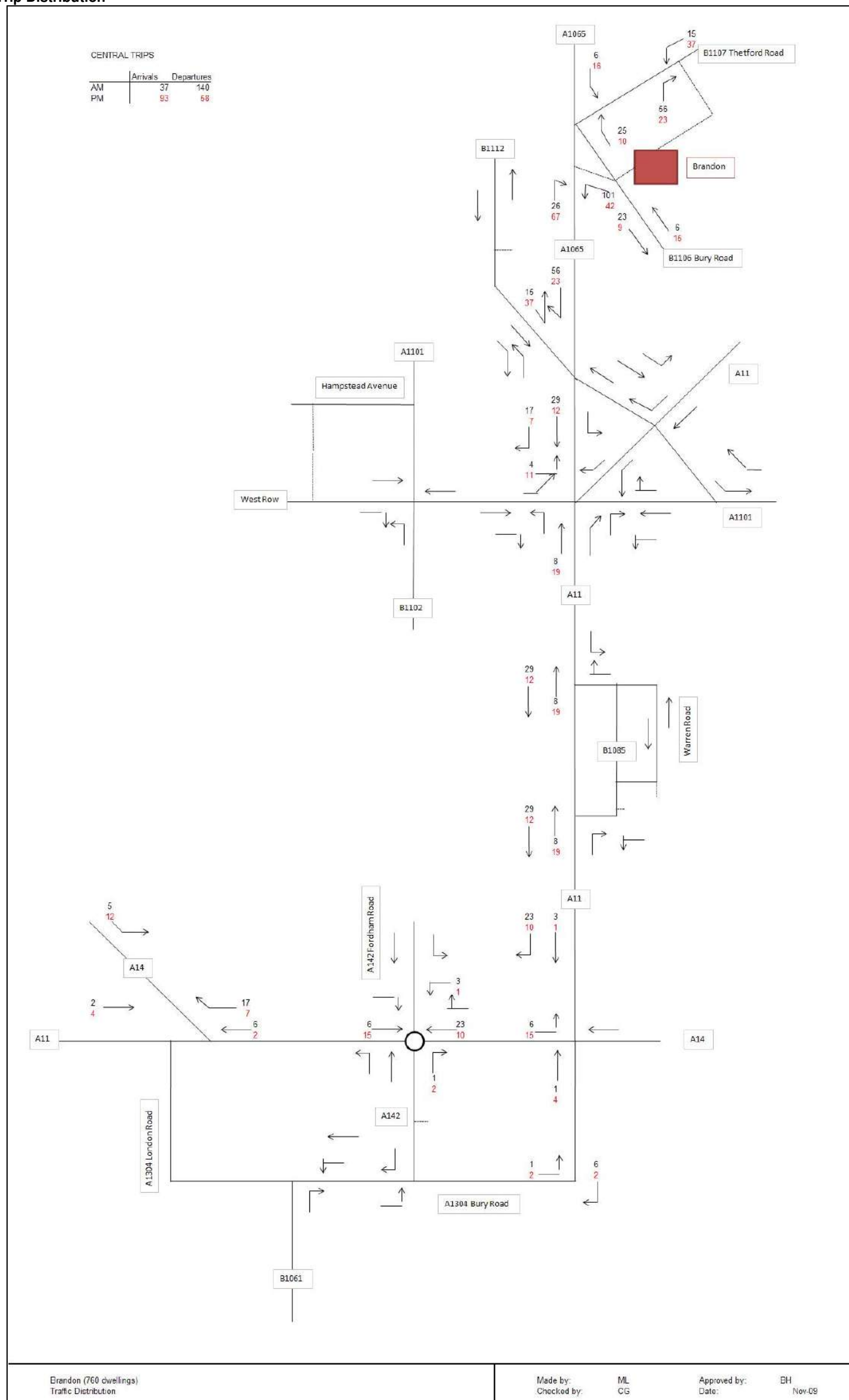
Red Lodge Trip Distribution

Direction	Route Assumption
Eastbound (towards Ipswich)	Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to back roads to link to A14
Southbound (towards London)	Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to A14 (junction 38) to A14 west to A14 (junction 36) to A11
Southbound (towards Newmarket)	50% traffic: Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road south 50% traffic: Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to A14 (junction 38) to A1304 Bury Road
Northbound (towards Mildenhall)	Warren Road to Dane Hill Road west to A11/B1085 north junction to A11 north to A11 Fiveways to A1101 north
Northbound (towards Thetford)	Warren Road to Dane Hill Road west to A11/B1085 north junction to A11 north to A11 Fiveways to A11 north
Northbound (towards Brandon)	Warren Road to Dane Hill Road west to A11/B1085 north junction to A11 north to A11 Fiveways to A1065
Northbound (towards Ely)	Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to A14 (junction 38) to A14 west to A14 (junction 37) to A142 Fordham Road north
Westbound (towards Cambridge)	Warren Road to Dane Hill Road west to A11/B1085 south junction to A11 south to A14 (junction 38) to A14 west
Town Centre	Warren Road north

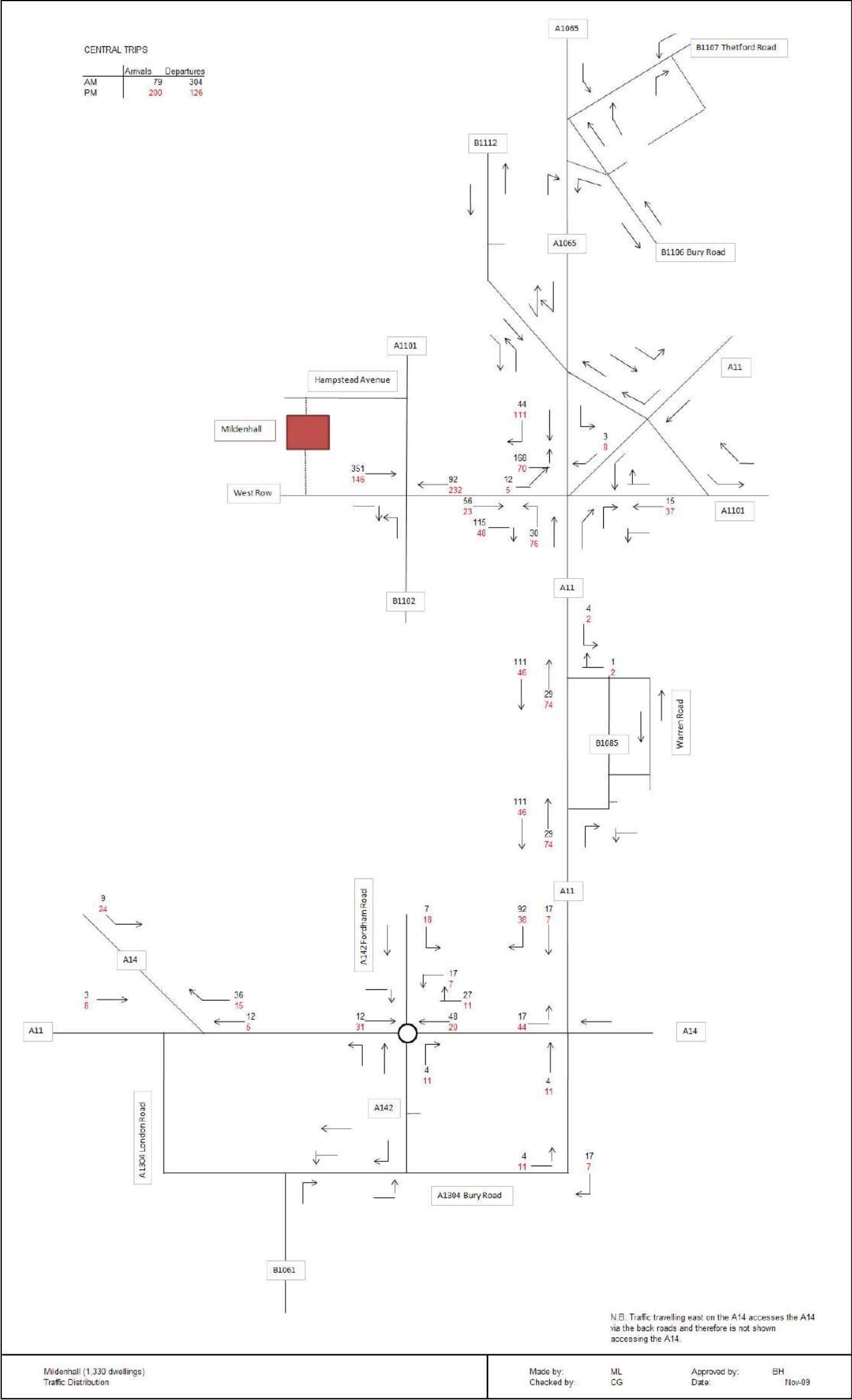
Appendix B 1 – Newmarket Trip Distribution



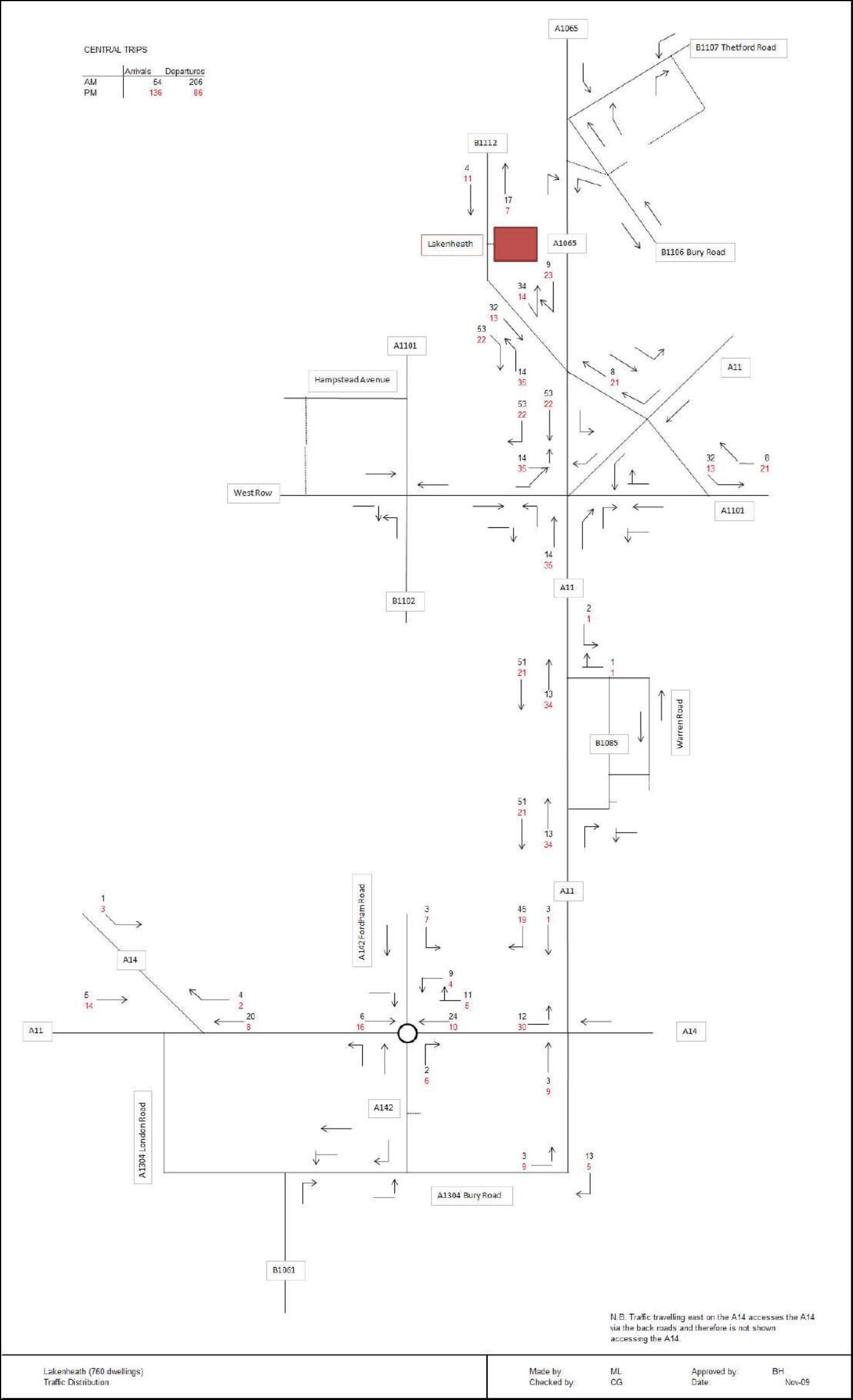
Appendix B 2 – Brandon Trip Distribution



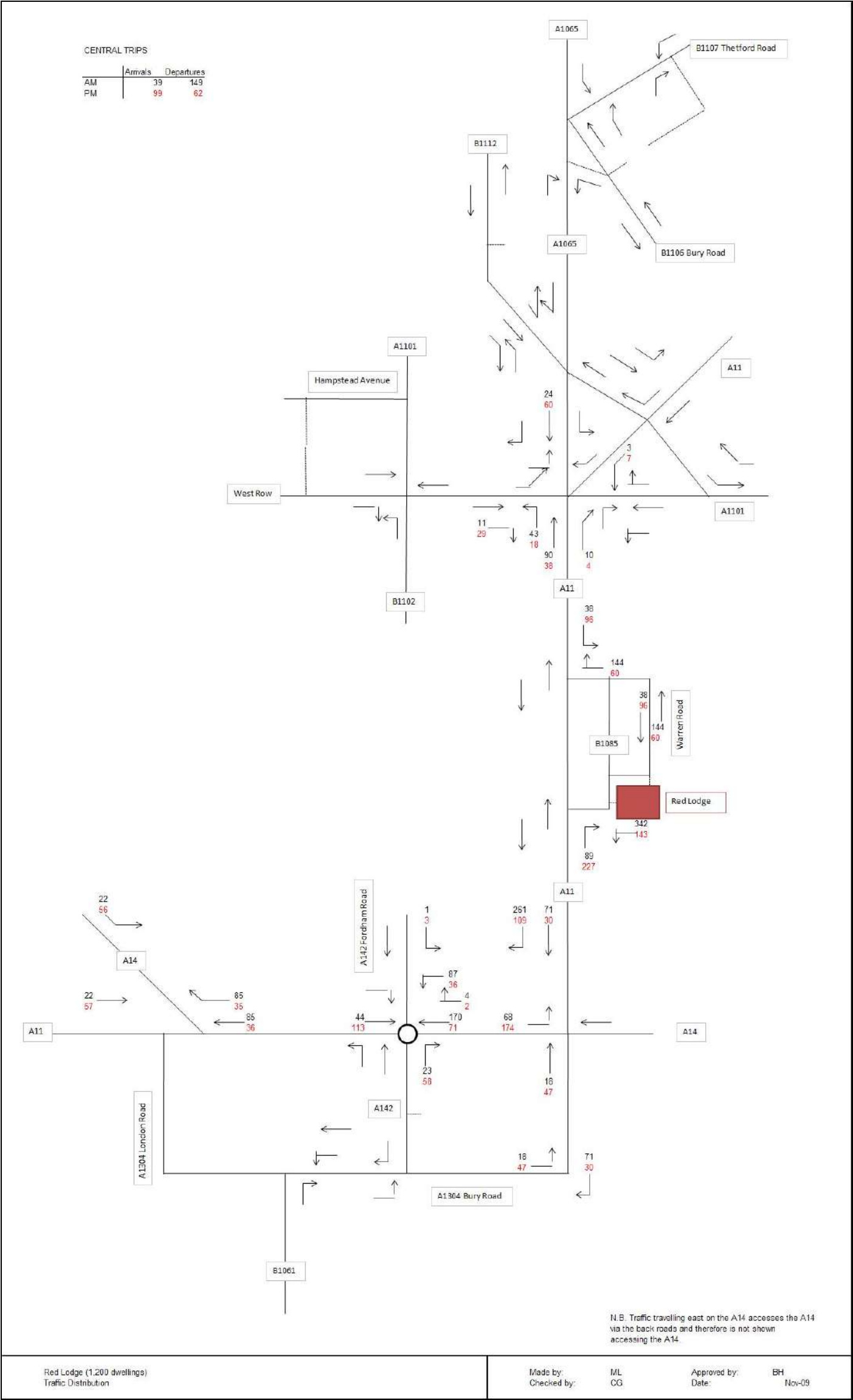
Appendix B 3 – Mildenhall Trip Distribution



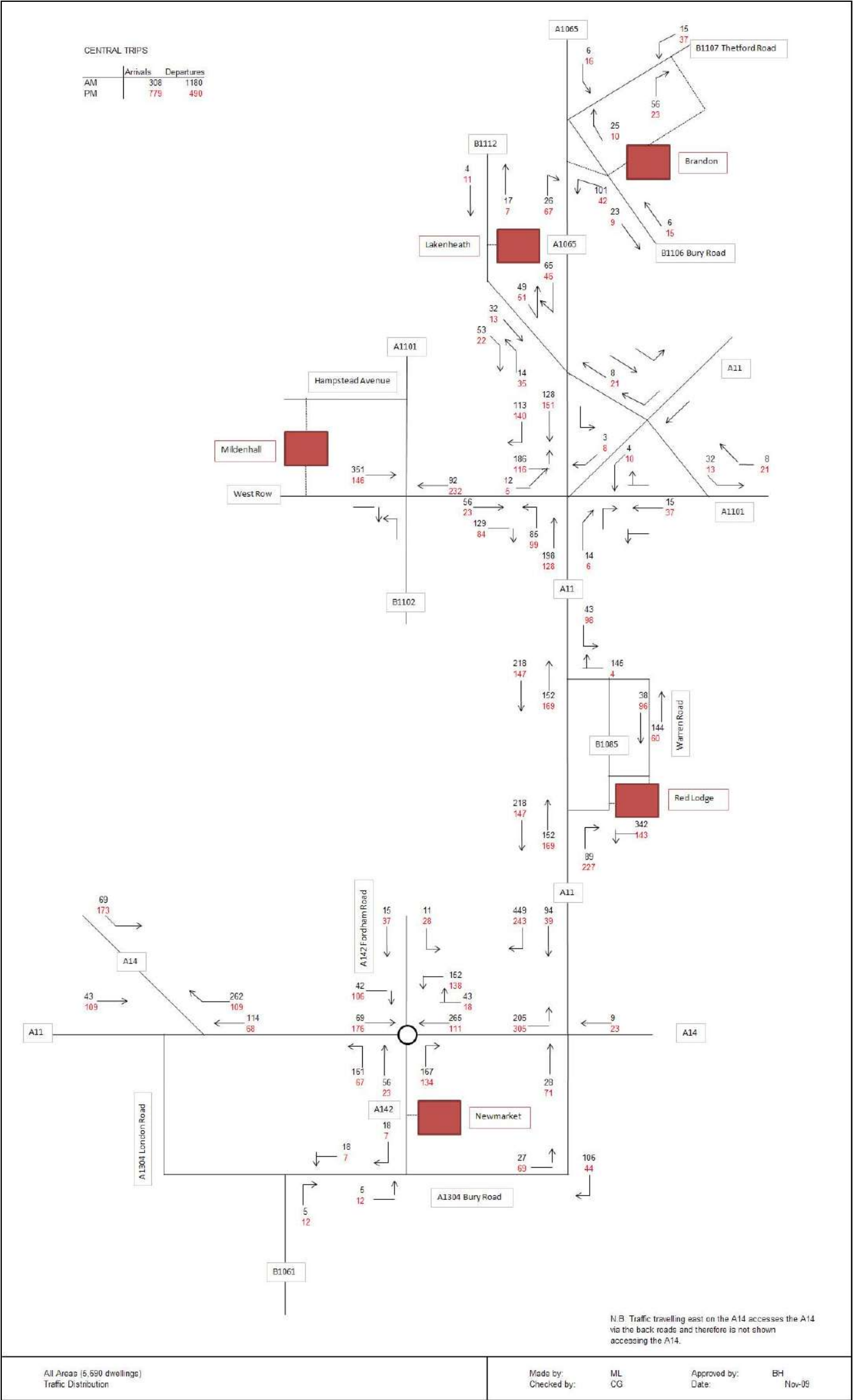
Appendix B 4 – Lakenheath Trip Distribution



Appendix B 5 – Red Lodge Trip Distribution



Appendix B 6 – Total Trip Distribution (All Areas)



Appendix C – Transport Facilities Proposals

Appendix C – Transport Facilities Proposals

This Appendix summarises the information discussed at the Workshop held on Thursday 12th November 2009.

Appendix C 1 – Outcomes of Workshop

	General	Walking and Cycling	Public Transport	Roads
Newmarket	<ul style="list-style-type: none"> 1,460 dwellings. There are plans for a new large Tesco superstore on the site south of the existing Tesco store. Horse racing sites within the town are protected. Development of the site is also likely to include employment, playing fields, a cinema and a community centre. A PARAMICS model by WSP exists for the area. Car parking charges have recently been introduced within the town. This has however led to people parking on side roads and residential roads. Therefore, there may be the need to introduce Controlled Parking Zones. Traffic conditions within Newmarket are very different on market and race days. Environmental enhancements to the High Street would be welcome, such as new street furniture. 	<ul style="list-style-type: none"> Sustainable measures are needed along the A142. Possibility to provide walking and cycling facilities along Snailwell Road. There are extensive off-road cycle routes along Exning Road and Newmarket Road. There are a few cycle racks along the High Street and the rail station, but none of these are covered cycle facilities. 	<ul style="list-style-type: none"> There is an informal Park & Ride in place. This is mainly used on market days and operates from the site opposite the Tesco store. However, the site is poor quality but Suffolk County Council does not want the liability to maintain it. A development of 1,000 dwellings would need to include a dedicated bus service with a good frequency. Need to consider the potential for providing bus priority along the A142 or along the existing route between the hospital and the leisure centre. More buses are needed to connect to the rail station. 	<ul style="list-style-type: none"> Vehicles will not be able to access Snailwell Road from the site. There are several Pegasus crossings along the A142. A new road layout scheme recently opened at the Clocktower junction. The roads are more congested on race days as people tend to drive through the town. There have been some minor improvements at the junction of Exning Road and Studlands Park Avenue.
Brandon	<ul style="list-style-type: none"> 760 dwellings. Brandon currently consists of low market and cheap housing. There is a poor level of employment within the town. No real traffic problems within Brandon. There are plans to try and make Brandon more upmarket. If there are problems along the A11 near Elveden during the holiday period, traffic tends to divert through Brandon causing congestion. There are overall plans to regenerate Brandon and to promote it as place for accessing the outdoors. 	<ul style="list-style-type: none"> Great potential for cycling within Brandon especially to link the residential areas with the town centre and the industrial areas. Some engineering works have been identified and costed with regards to cycling. Brandon Country Park, Santon Downham and High Lodge are popular locations for recreational cycling. These could be linked to Brandon itself. 	<ul style="list-style-type: none"> If the train stopped more frequently at the station, it is anticipated that the service would be used more. There is a poor level of bus provision so frequency would need to be increased. The current services are likely to be sponsored. The Brandon town route (R1) has the greatest potential for improvements. 	<ul style="list-style-type: none"> Tailbacks sometimes occur along Mile End Road towards the industrial estate. The level crossing can also cause traffic problems. There are proposals for a bypass to the north of the town but this would cross into Breckland who do not support the proposals.

	General	Walking and Cycling	Public Transport	Roads
Mildenhall	<ul style="list-style-type: none"> 1,330 dwellings. There is a significant level of United States housing between Mildenhall and Lakenheath to serve the American airbase staff. The airbase is not included in any Census data. A new larger Sainsburys store is proposed. There is a retail centre within the airbase which attracts trips but you need airbase connections to access it. 	<ul style="list-style-type: none"> The town is largely walkable due its compact community. The leisure centre towards the A11 Fiveways junction requires some cycle facilities. There is a new development near the Mill to the south of the town which includes cycle routes. The towpath along the river is not very cycle friendly. 	<ul style="list-style-type: none"> Mildenhall has a new bus station. Mildenhall is a stop on the National Express coach service linking to Stansted Airport. There is a need to increase the frequency of buses between Mildenhall and Lakenheath. 	<ul style="list-style-type: none"> The town centre and A11 Fiveways junction cause the greatest traffic problems. Cannot close the access onto the A11 south of Mildenhall as those would create too long a diversion.
Lakenheath	<ul style="list-style-type: none"> 760 dwellings. Not possible to build anything south of the town due to airbase constraints. There is no high school within the town so all students have to travel to Mildenhall. Maids Cross Hill is a nature reserve. 	<ul style="list-style-type: none"> The town is compact and therefore walkable. The back roads are quiet but there are no real cycle facilities present. 	<ul style="list-style-type: none"> Lakenheath has a rail station but this is approximately 4km north of the town centre. 	<ul style="list-style-type: none"> The road between Lakenheath and Mildenhall has traffic travelling very fast.
Red Lodge	<ul style="list-style-type: none"> 1,200 dwellings. Significant level of committed development to be built out. 	<ul style="list-style-type: none"> There is a National Byway through Red Lodge which uses the overbridge over the A11. Some potential for cycling exists. 	<ul style="list-style-type: none"> Kennett rail station is some 2.5km from Red Lodge. The Masterplan for the committed developments within Red Lodge has aspirations for links being provided to the rail station. However the rail station falls within Cambridgeshire County. Improvements are needed to bus services as these take an indirect route and consequently journey times are long. 	<ul style="list-style-type: none"> Plans exist for traffic calming of the old A11, including provision of cycle and improved pedestrian facilities. Some transport works are proposed for Warren Road, to include cycle and pedestrian facilities improvements.