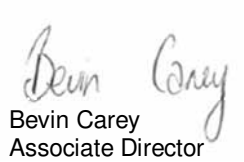
Sudbury Transport Study

Prepared by: 

Alex Keene
Senior Consultant

Checked by: 

Bevin Carey
Associate Director

Approved by: 

Bil Harrison
Regional Director

Sudbury Transport Study

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AECOM House, 63-77 Victoria Street, St Albans, Hertfordshire, AL1 3ER
Telephone: 01727 535000 Website: http://www.aecom.com

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Table of Contents

1 Introduction

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1.1 Study Overview

AECOM have been commissioned by Babergh District Council (BDC) and Suffolk County Council (SCC) to review the transport issues associated with planned residential and employment growth within Sudbury and the anticipated infrastructure requirements associated with such development.

Initial work was undertaken by AECOM as part of the assembly of transport evidence for the Babergh Local Development Framework Core Strategy in 2009/10. This work established the broad traffic and transport investment requirements to accommodate the then targets for residential growth, for Hadleigh, Sudbury, and the Ipswich Fringe. Since this time, the Coalition Government has notified their intention to abolish Regional Spatial Strategies, which sets out the levels of growth that each planning area need to allow for when developing their Local Development Frameworks. In light of this, a new proposed level of growth is currently being identified for the Sudbury area, against which future transport requirements will need to be considered.

1.2 Study Objectives and Methodology

AECOM were initially commissioned to consider a number of different aspects associated with transport provision and development in Sudbury, against three key study objectives:

- Revisit and provide advice on the prospects of delivering a Western By-Pass for Sudbury within the plan period recognising the long term aspiration for this scheme in Suffolk's third Local Transport Plan (LTP) the likely cost of the project and the likely availability of public funding for such schemes.
- Develop viable sustainable transport measures to improve transport conditions in Sudbury to facilitate housing growth in the medium term; and,
- Explore and aim to deliver the evidence requirements to support the emerging Community Infrastructure Levy (CIL) process.

An Issues Paper was produced in June 2010 which set out the initial findings of the study, identifying the key transport concerns and constraints within the town which could restrict the proposed levels of growth and provide a basis for discussion with SCC and BDC. This paper was based on a review of previous transport studies and literature related to Sudbury, conversations with key personnel who have been involved in the development of transport provision in the town to date and a site visit by key team members to investigate conditions at first hand.

From these discussions it was agreed that, given the short / medium term limitations in delivering significant transport infrastructure projects which could help to at least partially alleviate existing traffic issues within the town, the study should focus on identifying a range of transport measures which could help to promote sustainable travel behaviour, both in terms of existing movements and those likely to result from the proposed growth in the region. Further investigation of the CIL process would then be undertaken as more Government guidance is provided and best practice developed.

As such, a "shopping list" of relatively low cost measures has been developed which is intended to maximise the possibilities for encouraging walking, cycling and public transport use within the town, both through new public transport, walk and cycle infrastructure, and through softer 'Influencing Travel Behaviour' (ITB) measures, to help to reduce traffic pressure at key locations and maximise the potential for future growth to make use of existing highway capacity.

1.3 Report Structure

Following this introductory chapter, section 2 provides a review of the planning policy and key previous studies relevant to this report. Information is also provided on emerging guidance relating to the CIL process and the potential implications for the funding of transport infrastructure. Section 3 sets out the study baseline, identifying the current trip behaviour in Sudbury, and existing transport networks and accessibility. It also sets out the key transport issues that have been identified in the town, both with reference to sustainable transport and highway networks. Future growth in Sudbury is covered in section 4 with a summary of the proposed residential and employment developments that have been identified, with technical analysis underpinning the anticipated vehicular trip generation and distribution associated with this growth, and the flow implications of this at key locations

on the highway network. Following this, section 5 sets out the emerging strategy to minimise the impact of this future growth and mitigate existing issues. This includes identifying the potential scope for mode shift, a list of potential interventions across walking / cycling, public transport, traffic management and influencing travel behaviour and the implications of implementing these measures on vehicle trip levels from the growth areas. The final section summarises the key findings of the report and sets out the way forward.

2 Literature Review

2 Literature Review

2.1 Policy Background

2.1.1 National Transport Policy

Government planning policy is set out in a series of Planning Policy Guidance (PPG) documents and Planning Policy Statements (PPS), which are to be applied nationally to development proposals. PPG13 (Transport) describes the link between planning and transport.

The objectives of PPG13 are to integrate planning and transport at a national, regional and local level in order to promote sustainable transport choices, improve accessibility to jobs and other amenities by public transport, walking and cycling, and to reduce the need to travel, especially by car.

The Local Development Plan 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.

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.

The Government has signalled that they intend to promote a new steer for planning in the United Kingdom, with the abolition of Regional Spatial Strategies and the emergence of the Localism Bill. This is being promoted as encouraging a decentralised approach to planning with more say given to individuals, neighbourhoods and communities, with the Draft National Planning Policy Framework consultation document indicating the need for local and neighbourhood plans to guide local planning decisions. The emerging policy reiterates the need for sustainable development, stating "planning policies and decisions should actively manage patterns of growth to make the fullest use of public transport, walking and cycling, and focus significant development in locations which are or can be made sustainable." While local plans are expected to ensure that sufficient provision is made for housing growth to meet the future needs of the area, there will continue to be a need to ensure that for large scale development a mix of uses should be promoted to minimise the duration of travel and reduce the need to travel by car.

2.1.2 Suffolk County Council Policy

2.1.2.1 Suffolk Local Transport Plan 3 (LTP3) 2011-2031

Suffolk County Council's recently adopted Local Transport Plan 3 (LTP3) covers the period from 2011 – 2031 and is in two parts. The first part is a 20-year strategy that highlights the county council's long-term ambitions for the transport network. The second part is a shorter-term, four year, implementation plan that indicates how the county council are proposing to address these issues.

The overall transport strategy contained in the first part of LTP3 has three key themes:

1. Supporting wider priorities
2. Transport issues in Suffolk
3. Suffolk Transport Strategy

Under the Supporting Wider Priorities theme, a key policy objective for the county council is promoting and aiding economic resilience and private sector led growth by:

- Improving the quality of our transport networks;
- Tackling congestion;
- Improving access to jobs and markets; and
- Encouraging a shift to more sustainable travel patterns.

To this end, the following applicable transport aims are suggested:

- Improve connectivity and accessibility.
- Maintain core transport networks. Balancing capacity and demand for travel, through increasing the use of sustainable travel and reducing need for travel.
- Minimise impact of transport on natural and historic environment.
- Facilitate an increase in walking and cycling.
- Improve the physical accessibility of the transport system, improving information about travel options, improving access to services for those without access to cars.
- Reduce the number of casualties on the transport network.
- Improve accessibility to schools, colleges, universities and other places of learning.

Under the Transport Issues in Suffolk theme, LTP3 makes specific reference to transport issues within Babergh. Sudbury is seen as having significant air quality problems, particularly around Cross Street. There are also concerns relating to traffic growth associated with proposed development exacerbating existing congestion issues, with a need for improved access to services and potential improved public transport connections helping to mitigate this. As a means of addressing this, a number of key issues have been identified including:

- Sudbury bus station development and surrounding town centre environment.
- Sudbury Western Bypass.
- Sudbury town centre traffic management and Cross Street Air Quality Management Area.
- Linking new strategic development to town centres.
- Speed and management of A134.

The third theme, Suffolk Transport Strategy, identifies three key strands to urban transport:

1. Reducing the demand for car travel.
2. More efficient use and better management of the transport network.
3. Where affordable - infrastructure improvements, particularly for sustainable transport.

It also notes the importance in improving road safety in the county.

With regard to passenger and public transport networks, the County Council will predominantly focus on the following issues:

- Improvements in ticketing (such as use of smartcards and mobile phones allowing multi-operator ticketing).
- Service co-ordination.

- Waiting environment.
- Punctuality and reliability.
- Publicity, service information and journey planning including real time passenger information and access via internet and mobile devices.

A number of measures specific to Sudbury are provided in the LTP3 Implementation Plan and quoted below.

- The main focus of the strategy will be on reducing the need for travel, especially by car, including planning for future developments which promote sustainable travel, and contain suitable facilities so people do not have to travel far to reach them.
- Ongoing parking reviews will consider the balance of parking issues for visitors, workers and residents. This is closely linked with the Cross Street Air Quality Management Area (AQMA). Cross Street is also identified as a strategic HGV route and the AQMA is highly sensitive to HGV levels which produce a disproportionate level of nitrogen dioxide to their relative flows (46% of nitrogen dioxide from 7% of the vehicles on Cross Street).
- In the long term the Sudbury Western bypass is considered necessary to relieve the air quality management area and congestion issues around Market Square. The county council will continue to promote this project. However this is not considered likely to be delivered in the short to medium term and so other measures will be required to address the problems in the interim.
- Improved pedestrian access to and around the Market Place, including formalisation of the most used crossing point on King Street, which is the hub of the town; and dropped kerbs within residential estates to aid mobility. Other pedestrian facilities are also to be addressed.
- In the long term future redevelopment will make it possible to build a new bus station adjacent to Francis Road and Great Eastern Road. The new bus station would be larger and would have better passenger waiting facilities including real time information display screens.
- Lorry parking is currently located behind Waitrose and accessed via the Belle Vue junction. Traffic associated with the lorry park combined with deliveries to the area, leads to a high volume of commercial vehicles in this retail and car park area. There is a proposal to relocate the lorry park to the industrial estate to the north of the town. This would reduce the need for HGVs not serving local retail from contributing to town centre movements and locate parking for these vehicles to the industrial estate, the primary destination for the majority of vehicles.

SCC officers have previously identified a range of potential schemes for Sudbury as part of the LTP3. These are covered in more detail later in this report but are consistent with aims to encourage a more sustainable approach to transport. It has been acknowledged however that there is limited short term funding for such schemes. The LTP3 indicates that Suffolk wish to see the delivery of ambitious highways projects including those in Sudbury such as the Western Bypass given the 20 year period of the plan. This will be dependent upon central funding and as such the business case requirements associated with being successful with bidding for such funds.

2.1.3 Sudbury and Great Cornard Local Transport Action Plan (LTAP)

In 2001, Suffolk CC commissioned the development of a LTAP for Sudbury and Great Cornard to develop a sustainable and integrated transport strategy for this area in light of emerging national and regional policy. The LTAP was intended to compliment the relevant policy documents at that time, including the Babergh Local Plan and Suffolk Structure Plan and it is not currently clear what status, if any, the LTAP document has.

While in some ways dated given the age of the document and associated research, it does provide an important insight into the studies relating to the Western Bypass proposed for Sudbury and the historic transport issues in the area, with it noted that the

major requirement of the LTAP was “that it reduces to the very minimum the level of traffic passing through the medieval part of the town with corresponding reductions in the wider conservation area which embraces Sudbury town centre.” A provisional target of a 70 – 80% reduction in traffic flows into this area had previously been identified, whilst amongst its objectives was to develop the case for providing the A131 Sudbury Western Bypass, which would be expected to help deliver this level of reductions.

The final report was produced in 2005. An appraisal had been undertaken on 5 alternative options, which identified a range of traffic management measures for the town centre, including upgrades to the Belle Vue junction, 2-way operation of Girling Street, selective road closure and pedestrian improvements, to potentially be combined with alternative road building proposals for the west and south of the town to allow traffic to avoid the historic core. In addition to advancing the package of town centre traffic management measures, the report recommended that further work be undertaken to develop a southern relief road and to investigate potential ways to reduce the environmental impact of a western bypass. In addition, the report identified a range of walking and cycling infrastructural improvements to encourage mode shift from the car to more sustainable forms of transport to compliment highway infrastructure works. A preliminary parking strategy was also identified which indicated a reduction in the relative provision of long stay parking in the town and the introduction of charges for all off-street parking.

The report does acknowledge that there are issues regarding the feasibility of the road building schemes, particularly given the negative impacts of road building in environmentally sensitive locations. However it does note the importance of pursuing these in order to maximise the potential benefits to Sudbury as part of a wider package of measures.

Since the production of the LTAP, which recognised the funding and environmental issues associated with the provision of a town centre relief scheme, a suitable alternative has yet to be identified which meets the initial objectives of reducing traffic within the historic core, while many of the complementary measures identified have also either not come forward or been considered unfeasible.

2.1.4 Babergh District Council Policy

2.1.4.1 Babergh District Council Core Strategy

BDC is currently in the process of developing the Babergh Local Development Framework (LDF) which once complete will replace the Babergh Local Plan which was adopted in 2006.

Babergh District Council has commenced work on the first part of the new planning framework, namely the Core Strategy. Once adopted, this document will set out the broad vision and spatial strategy for Babergh for the next 20 years. Work on an 'Issues and Options' document was completed in mid 2009. Following the proposed revocation of the Regional Spatial Strategy (and regional growth targets), a new strategy was produced outlining potential alternative growth options with a Core Strategy Submission Draft document approved by committee in August 2011 to be used for public consultation.

The Core Strategy mainly concerns the development and use of land and will outline the strategy for delivering broad development needs in housing, employment, leisure, transport, retail and other important areas in Babergh. The Core Strategy Submission Draft identifies the need to provide a further 850 homes in Sudbury beyond committed and windfall sites within the period up to 2031.

The Submission Draft states that historic growth has resulted in problems with traffic flow and congestion around the town centre and air quality problems in Cross Street. As such, it is noted that key transport issues for the town include ensuring new development has good links to the town centre for pedestrians and cyclists, improving town centre facilities for bus passengers, a western bypass, traffic management and air quality improvements.

Taken at face value, there appear to be a number of issues that need to be addressed and which will be exacerbated by future growth in Sudbury. For funding purposes it will be necessary to identify those measures which help facilitate future development as their non-delivery could act as a brake on potential future growth.

2.1.4.2 Hamilton Road Quarter Development Brief - March 2010

A Supplementary Planning Document (SPD) has been produced to provide a framework for the future development policy area SD06, focussing on the area around Hamilton Road and Sudbury Bus Station. This has been identified as an area requiring redevelopment, with the bus station considered "tired", limited retail or residential frontage with back of shop servicing access, aesthetically poor pedestrian routes and complicated vehicles movements, requiring all vehicles in the quarter to travel through the bus station. These help to add to the perception of the dominance of private vehicles over other forms of movement. This is against the context of an important public transport facility and key pedestrian desire lines through the site, both those driven by the bus station and through movements between the rail station, leisure centre, supermarkets and associated parking to the south and the town centre to the north.

To respond to this, the development brief identifies a comprehensive redevelopment of the Hamilton Road area, including providing a new pedestrianised shopping area to the north, linking the key desire lines to the town centre with a new signalised crossing on Great Eastern Road. The bus station would be relocated to the east of the site with improved waiting facilities and its own dedicated signalised access from Great Eastern Road. The proposals also include the potential for providing new residential, leisure, retail, cafes and restaurants, as well as improved landscaping.

This development will be important in order to deliver improved pedestrian connections between the town centre and a range of key facilities, as well as providing the scope for an improved public transport offer for the wider town. Whilst this is an adopted SPD, there is currently no strongly defined timetable for delivery, with a series of reports currently being undertaken to consider retail interest / capacity and topography, and therefore ultimately the financial viability.

Given the wider benefit likely to be received from the proposals, particularly the bus station improvements, the need for financial support to help bring it forward within the medium term needs to be considered.

2.2 Community Infrastructure Levy (CIL)

The Department of Communities and Local Government published updated guidance on CIL in May 2011. The following points have been identified from this guidance as being relevant when considering future transport expenditure in Babergh, with associated comments provided in bold.

1. CIL can cover expenditure for transport, flood defences, schools, hospitals, and other health and social care facilities (but not affordable housing (paras 12 and 13) ***All aspects of transport capital and revenue expenditure can be funded through CIL***

2. CIL can be specified as covering expenditure outside the charging area, and can be used to backfill early funding, or used to undertake 'prudential' borrowing (paras 15 to 18) ***CIL funds can be used in a variety of ways***

3. Annual accounting reports are required (para 19)

4. A definitive development plan is required to underpin the CIL (para 21) ***The CIL evidence must relate to some form of planning framework, not necessarily formally adopted***

5. A charging schedule must be produced that is 'balanced' and which will not put at risk the overall development of the planning area (paras 22 and 23) ***So the CIL fund may not cover all the infrastructure needs, if this would harm the development***

6. The CIL needs to be based on the total funding requirements for the area, but the authority is not tied to the plan when spending the money (para 24) ***So the CIL level needs to be justified in theory, but can be spent on a wide range of purposes in practice***

7. The CIL must take account of the effect of the charge on the economic viability of development across the planning area (para 25) ***See item 5***

8. Differential rates, (for example urban and rural) and rates developed from a sample of sites are allowed (para 28) ***...but too many rate levels will start to overlap with ongoing planning obligations***

9. Community and stakeholder consultation must be undertaken through a preliminary draft, before a formal draft for examination is published (para 30) ***... but little is said about the form of this consultation – possibly just email and announcement will do***

10. The charging schedule must be examined in public by an independent person, who can approve, reject, or approve with modifications – rejection can be on the grounds that an appropriate evidence base has not been relied on, or that the charge level is 'unreasonable' (paras 31 to 34) ***.. but little is said about the quantity and quality of the evidence***

11. The levy must be charged in pounds per square metre on the net additional increase in floorspace on new build over 100 sq metres, indexed to the Tender Price Index. (paras 39 and 41)

12. The levy becomes due from the land owner when development is commenced. (paras 45 and 49) ***.. but can be spent at any time***

13. There is a complex relationship between CIL, and Section 106 charges, which can involve relief from CIL if a S106 agreement is in place. (para 53)

14. There may still be some site specific impact mitigation requirements, to be expressed through planning obligations in parallel with more general CIL. (paras 59- 63) ***Care will be needed to identify the 'impact boundary' where S106 mitigation obligations end, and CIL schemes begin***

15. The CIL fund use needs to be expressed as an intended list of projects or types of infrastructure, to avoid double charging developers directly for elements they are contributing to through the CIL. (paras 64-65)

16. The Charging Authority can, however, change the list (and does not appear to be under an obligation to spend CIL funds on the items in the list). (para 66)

17. CIL is expected to replace pooled developer S106 obligations within three years. (para 68)

Pointers for the identification of a CIL framework for Sudbury

1. **Schemes have to be needed to support development, not just solve existing problems**
2. **Clarity is needed to define a hierarchy of areas – local development S106 obligation; wider sub-area; and the rest of the District planning area. This means that area wide ITB initiatives, the catchment area of Sudbury town centre sustainable travel and public realm enhancements, and the traffic patterns through/ terminating / local will need to be defined.**
3. **A top down approach is needed to set the 'economic viability' budget – summed across expenditure sectors, and across developments expected to be brought forward in the development plan period**
4. **A firm 'bottom up' shopping list is needed to justify and define the CIL level – but this does not have to be costed in detail, or followed in practice.**

2.3 Relevant Previous Studies

2.3.1 Economic Reports

2.3.1.1 Sudbury and Hadleigh Town Centre Health Check Report - July 2008

The most recent health check of the retail provision in the two major settlements in Babergh, Sudbury and Hadleigh, was undertaken by the district council in 2008. As well as economic indicators such as vacancy rates and mix of uses, consideration was given to the accessibility of the town centres and the perceptions of customers and residents. While both retail areas were considered to be in good health, some concerns were identified relating to the accessibility of Sudbury town centre, the poor pedestrian connectivity to the bus station generally and connectivity between King Street and the east of the town. This ties in with the impressions of poor pedestrian signage to key destinations and the lack of crossing points around the Belle Vue Junction and along Great Eastern Street. The level of peak time traffic and lack of cycling facilities were also identified as reasons not to visit Sudbury. The report suggests however that the town is well served by public transport, while the availability of significant levels of free parking in the town centre is a key attraction.

Recommendations for improving the town centre to boost the retail sector included providing improved signage, particularly to / from the car parks and bus station, provision of more cycle parking in the town, addressing the level of traffic, in particular along Market Hill, including limiting the number of larger lorries through the town and improved pedestrian links around Belle Vue, King Street / Market Hill and to the bus and rail stations.

Despite the traffic concerns, the town centre is identified as being in good health and since this report was produced, there has been a slight fall in traffic flows in Sudbury which may have reduced the extent to which this is considered an issue. Again the need to improve sustainable transport connections is identified. While the plentiful provision of car parking is seen as a benefit, there is currently a lack of evidence to draw strong conclusions about the impact of parking charges / reduced availability on the town centre.

2.3.2 Transport Reports - Strategic

2.3.2.1 Babergh Local Development Framework – Transport Impacts – Jan 2010

AECOM were jointly commissioned by SCC and Babergh District Council to review the transport impact implications of the emerging proposals for the broad locations of housing provision within the district. In total, 8 broad locations were considered in the region of 3 existing settlements; Hadleigh, Sudbury / Great Cornard and Ipswich Fringe.

The report considered the existing accessibility and identified the potential mode share, vehicular trip generation and vehicular trip assignment of each of these broad locations. This assumed that the total dwelling allocation for the town was applied to a single location. With regards to Sudbury, four broad locations were considered:

- South-west of Sudbury
- North of Sudbury
- East of Sudbury
- South and South-east of Sudbury

The report noted that for each of these locations, there would be significant impacts on the town centre gyratory, although this impact may be considered less in the cases of the North of Sudbury and East of Sudbury locations given that the A134 Springlands Way could be used to bypass the town centre for some trips. The report also identified a range of potential measures for minimising the impact of car use through encouraging walking, cycling and public transport. As well as identifying the benefits of a degree of self-containment in the development proposals, to include a range of social infrastructure within walking distance, a package of potential walking and cycling measures was also identified, as was the benefit of the future potential redevelopment of the bus station combined with the provision of new bus services linked to the development.

A high level review of potential infrastructure improvements for Sudbury identified potential approximate costs of £6 million. Based on an overall maximum development quantum of up to 4,100 dwellings, this equated to approximately £1,500 per dwelling.

This level of residential development is significantly greater than that currently being suggested and being considered as part of this study. A similar infrastructure provision to that identified in the 2010 report, assuming no other sources of funding, would result in a significantly higher contribution per dwelling. This may however be at least partially offset by the inclusion of future commercial development. While this study will identify a range of potential transport measures in Sudbury, the future funding of these, in particular the economic viability of future development if these are to be solely funded through CIL, will need to be considered.

2.3.3 Transport Reports – Technical

2.3.3.1 Belle Vue Roundabout – Great Eastern Road – King Street, Sudbury Feb 2008

AECOM were requested by Suffolk County Council to investigate potential improvements to the Belle Vue Roundabout (Great Eastern Road / Cornard Road / King Street / Newton Road) and the associated priority junction between Girling Street and Newton Road. The report states that SCC's key aims for these improvements were:

- To control traffic movements, particularly the merge at King Street;
- To provide a new northbound link to Newton Road in order to minimise traffic circulating the Sudbury town centre one-way system;
- To optimise pedestrian safety and convenience through signal controlled crossings; and
- To provide benefits to cyclists through advanced stop lines at traffic signal installations where necessary.

Various schemes were looked at to deliver these objectives, principally variations on signalising both these junctions or maintaining the roundabout with a northern link and signalising the Girling St / Newton Road approach. Generally these options were found to not be feasible due to significant capacity, queuing or delay issues, in particular when considering how to incorporate pedestrian crossing facilities. Following discussions with SCC, a further option was considered, where the existing junction arrangements were maintained and a series of zebra crossings were provided on key approaches as well as on King Street. This was identified as a more cost effective solution to providing improved pedestrian connectivity at this junction.

It was also recommended that the Great Eastern Road / Hamilton Road priority junction was signalised on a demand dependent basis, providing new pedestrian crossing facilities and improving bus entry / exit from the bus station.

2.3.3.2 Sudbury Traffic Counts – Nov 2009

In May 2009, Suffolk County Council appointed AECOM to commission and report on a series of traffic surveys in Sudbury, including pedestrian and cyclist counts, MCC, ANPR and ATC surveys. As well as summarising the survey results, the overall objectives of the report were to identify the potential change in traffic movements at the Belle Vue junction if the junction was redesigned to allow all movements and the potential number of HGVs could be diverted from the town centre if an alternative route to the A131 was provided. The report concluded that approximately 50 vehicles in the AM peak, 110 vehicles in the PM peak, and 1130 vehicles in a 12 hour period currently either rat-run through Cats Hill / Ingrams Well Road or travel through the one-way system because of the current junction arrangement while 165 HGVs travel on the A131 between the Melford Road Roundabout and Ballingdon Street over the course of a 12 hour period.

The report also identified that a pedestrian crossing should be provided on King Street near the roundabout given the pedestrian flows recorded and if a double roundabout scheme was introduced at Belle Vue, controlled crossing points should be provided to allow pedestrians to cross between the roundabouts.

2.3.3.3 Modelling & Feasibility Study of the Belle Vue Roundabout, Sudbury – May 2010

The analysis of the 2009 surveys led to AECOM being commissioned to revisit the modelling undertaken previously, considering the latest survey flows. Again a range of options were considered, and as well as the dual signalisation and roundabout / signals approaches, an option where a second roundabout was introduced at the Girling Street / Newton Road junction was also included. While the modelling indicated that a double roundabout, and the majority of other schemes, would not be operationally feasible, the report suggests that an option based on the roundabout / signals basis (Option G) which provides the desired pedestrian crossings could operate at capacity, given existing traffic flows. It was identified that further work would be required to confirm the feasibility of such a scheme given concerns relating to the land take required and access to private land.

The junction modelling undertaken to date have been based on existing survey traffic flows with no allowance for future growth. Despite the potential of Option G, a Belle Vue scheme does not yet appear to have been identified which delivers a northern movement and pedestrian facilities while providing a junction that would operate within capacity following future growth. Modelling undertaken to date suggests that there is currently spare capacity at the junction, subject to the impact of blocking back from the King Street merge.

2.3.3.4 Cross Street Air Quality Action Plan

BDC have commissioned consultants to produce an Air Quality Action Plan (AQAP) to identify measures to meet the air quality objectives for the Cross Street AQMA. The study had not been finalised at the time of writing, however a draft version of the report produced in October 2011 acknowledged the relative impact of HGV traffic on pollution in the AQMA, as well as the general contribution of vehicle flows in the area. In order to address this, a number of suggested actions have been identified under the headings; traffic management, lowering emissions, promotion of alternatives, planning and education and information. Included within these are small scale works to improve traffic flow such as further restrictions to parking on Cross Street, encouraging measures which reduce the number of vehicles on the road, including travel planning, parking management and walking / cycling schemes as well as recommending changes to redefine strategic lorry routes in the area and the potential introduction of a new one-way system along Cross Street and Friar Street / Church Street. A detailed study to identify the air quality impacts of the traffic management options has recently been commissioned by SCC but has yet to be completed.

3 Study Baseline

3 Study Baseline

3.1 Introduction

Sudbury is the major settlement in the District of Babergh in Suffolk. Located close to the Essex border, it is a historic market town with a strong town centre, principally located along North Street, Great Eastern Street, King Street and Market Street. A conservation area covers much of the historic part of the town, extending from Ballingdon in the south to Girling Street in the north and Hamilton Road in the east. In addition to the town centre, the other major employment areas in Sudbury are located to the north of the town; the Woodhall Business Park located off Springlands Way and the Chilton Industrial Estate, located either side of Northern Road. Both the bus and rail station in Sudbury are located to the south-east of the town centre and are accessed from Great Eastern Road / Station Road. A map of Sudbury is provided in Figure 3.1, showing the town in the context of the wider area as well as the key locations within the town.

3.2 Local Context and Trip Patterns

Sudbury is identified as a key employment, retail and services location within Babergh and this is reflected in traffic patterns in the town. Previous studies have noted that the vast majority of trips accessing the Sudbury and Great Cornard area have a purpose for being in the area, with low levels of through traffic identified[1]. While the 2009 ANPR surveys were not designed to determine the full extent of through traffic movements through the town, analysis of the available data suggests that approximately a fifth of trips that enter and leave the town centre on the A131 in either direction will continue straight through the town without stopping.

The idea of Sudbury as a key location for employment in Babergh and having a high degree of self-containment is supported by census journey to work data which indicates that over 40% of people in Sudbury and Great Cornard travel less than 2km to work. This compares to only 29% in nearby Ipswich and 20% across England. Much of Sudbury is within 2km of the town centre, and these short distances are emphasised when considering that only 12% of people travel between 2km and 5km to work, compared to 32% in Ipswich and 20% in England.

Despite the relatively concentrated nature of Sudbury, 2001 census data indicates that almost 57% of people drove to work, compared to 55% across England. While walking accounts for a significantly above average proportion of trips compared to the national average (17% compared to 10%), driving appears to be undertaken at the expense of bus journeys with only 3% of people in Sudbury travelling to work by this mode compared to 10% in Ipswich and 8% nationally.

Given the relative proximity of much of the town, the mix of employment, retail and residential uses and the potential for ensuring proximity to bus services, this suggests that there is scope for modal shift from private car to more sustainable forms of travel and measures should focus on self-containment, ITB measures and walk / cycle facilities improvements.

Detailed tables relating to these travel patterns are provided in Appendix A.

A review of ATC data in the area has indicated that traffic flows in Sudbury have generally been relatively static in the last 10 years, with slight falls in flows on the key road corridors to the town, with the exception of the Waldingfield Road / East Street corridor. This is shown in Figure 3.2. More detailed analysis indicates that flows at all the ATC loops has fallen since 2007, which is most likely a result of economic conditions and rising fuel costs.

Work undertaken as part of the business case for the Western Bypass and subsequent LTAP assumed, based on the forecast data available at the time, a growth in traffic of up to 22% between 2001 and 2010. In comparison, ATC data shows only a 2% rise on Ballingdon Street over a similar time period, suggesting the LTAP proposals may have a reduced need, at least in the short to medium term

[1] Through traffic accounting for 7 – 11% of total trips in Sudbury & Great Cornard (Local Transport Action Plan – 2005)

3.3 Sustainable Transport Networks

Although LTP3 notes that there is a major network of footways and cycle routes through Sudbury, the extent and quality of pedestrian and cycling facilities varies considerably across the town. While North Street is a low trafficked, block paved "high street" and the other town centre streets generally benefit from wide pavements, a number of roads leading into the town centre either have poor quality / narrow footways or provision on only one side of the road. There are strong desire lines into the town centre from the surrounding residential area and also from the town centre towards the facilities off Great Eastern Street, including the bus and rail stations, supermarkets, leisure centre and car parking.

A key crossing location on Kings Street, complicated by parking and two lanes of traffic following diverge

Non-continuation of footpath on northern side of Cornard Road and limited visibility for pedestrian crossing

While there are crossing points at a number of strategic locations around the town centre, as shown in Figure 3.3, this is a particular issue around the Belle Vue Junction to the east of the town centre and along the eastern section of King Street. These are important desire lines for pedestrians coming from the north and east of the town as well as people travelling between the town centre and the facilities to the south-east. For the latter of these movements, pedestrians are either required to walk along the traffic dominated environment of Great Eastern Road or through a small arcade of shops and across the bus station, bringing pedestrians into conflict with buses as well as vehicles associated with the back of retail parking and servicing in this area.

While uncontrolled crossing facilities are provided at Belle Vue, the combination of multiple lanes to cross, high traffic flows and poor visibility can make crossing difficult for pedestrians. Surveys indicated that while there are a significant number of pedestrians who cross King Street, flows are much lower across Newton Road and Girling Street while very few people cross Cornard Road at the junction. These would be expected to be key desire lines into the town centre from the east (both for existing movements and in terms of future growth) and may reflect that pedestrians feel they need to find an alternative route given the difficulty in crossing in these areas.

Some of these issues may be partially addressed through the provision of two new puffin crossings on Girling Street at the Belle Vue junction, to be funded through Section 106 contributions from the nearby Sainsbury's development. Access to the south-east would also be expected to be improved as part of the future development of the Hamilton Road Quarter, which would need to increase permeability through the area. Fully addressing these crossing and permeability issues will be important in order to achieve modal shift within the town.

Sustrans identify two cycle routes in Sudbury. The South Suffolk Route A runs off-road to the south of the town from the leisure centre before connecting into National Cycle Network Route 13 near Ballingdon. The Bures Loop identified as running on-street

along Cornard Road into the town centre where it continues down Friar Street into Quays Walk and connects with the Route A. The SCC LTP3 documents identify a more comprehensive network of mostly on-road cycle routes.

However observations on site indicated a general lack of cyclist provision in terms of cycle lanes, advance stop lines (ASLs) and signage, including on key corridors into the town centre and many of the routes identified as part of this cycle network, including along the Bures Loop. Where these are provided, it is often for only short sections and does not indicate a joined up network. A number of key corridors into the town centre do not have footpaths along both sides of the carriageway, requiring pedestrians to cross, often where there are no facilities, or walk on the carriageway. There is evidence of significant cycling to the railway station, although this is to the extent that there also appears to be a lack of covered cycle parking to cater for demand.

Non-continuous footway on the southern side of Newton Road on approach to the town centre

Excess demand for covered cycle parking at Sudbury Rail Station.

Figure 3.4 indicates some of the walking continuity issues along two key road routes towards the potential areas for growth to the north and east of the town centre. Given the potential walk times associated with accessing the town centre from the outskirts of Sudbury, of the order of 20 – 30 minutes based on a 80m/minute pace, people would not be encouraged to walk unless there is a high quality of provision. As indicated on the sketch, while efforts have been made to ensure the legibility of the route along East Street / Waldingfield Road, pedestrians are generally poorly provided for if travelling along Newton Road.

There are currently no footpaths on either side of Newton Road around the development area while there are also limited connections across and on the approach to the Newton Road / Northern Road roundabout. While there are crossing facilities provided at each of the Church Field Road / Waldingfield Road and Springlands Way / Waldingfield Road roundabouts as well as some off-road cycle provision, these do not provide pedestrians with priority facilities and given the potential for high traffic speeds along the A134, this could act as a barrier to both pedestrian and cyclist movements.

Although some off-road cycling facilities are provided, these are for relatively short sections around the roundabouts near the development area. While the LTP3 indicates a mostly on-road cycling network, no provision in the form of signage or on-carriageway cycle lanes is provided, while carriageway widths, particularly along East Street / Waldingfield Road, are reduced by on-street parking bays.

Despite the relative concentration of the town, with much of it within a 2km arc of the town centre, the lack of a comprehensive and connected pedestrian / cycling network and associated facilities will minimise the opportunity for achieving mode shift, both in terms of existing movements and any potential future development.

There is a comprehensive network of footpaths and bridges connecting the residential areas either side of Springlands Way. These are considered expensive to maintain when compared to at-grade facilities. Therefore the potential for removing some of

these bridges, to be potentially replaced by at-grade crossings has been identified as a long-term cost saving measure. Given the gradients involved and the existing lack of footways along Springlands Way, it is unlikely that footbridges could be replaced by at-grade facilities, without overcoming significant feasibility issues and associated costs. It is anticipated that there will be increased pedestrian demand across the A134 with future development to the north of the town. The removal of footbridges would lead to a reduction in the existing level of pedestrian facilities and given the lack of feasible alternatives, act as a significant barrier to movement.

. **Existing footbridge across Second Avenue which forms part of the pedestrian network linking the residential areas either side of Springlands Way**

Given the need to ensure strong non-vehicular links across the A134 for both existing and future movements and the lack of feasible alternatives, the footbridges should be retained to promote sustainable transport behaviour and improvements in the area should consider how to connect and improve the existing networks of which these bridges are part.

Bus services are provided to the major towns of Ipswich, Colchester and Bury St Edmonds as well as to other smaller towns in the vicinity. Appendix B includes a network diagram of the wider area bus and rail routes which serve Sudbury. A more detailed routing of bus services within Sudbury is provided on Figure 3.5.

Two routes operate circular services within Sudbury, with Route 5 the most frequent service, with 2 buses per hour at peak times running from the bus station to Great Cornard and back again. Route 700 / S1 effectively operates along three loops, one between the town centre and Acton via Tesco on Springlands Way, one between the town centre, Tesco's and the Northern Road / Newton Road roundabout and one between the town centre and Ballingdon. There are however only 13 buses per day operating between these three loops. Table 3.1 shows bus routes operating in Sudbury with a peak frequency of one hour or greater. As well as the destinations shown, the routes also service smaller towns and villages en route. All these routes tend to run hourly services with daily frequencies varying between 10 and 15 services per day. Colchester has two services linking it with Sudbury with a combined peak frequency of 30 minutes making it the best serviced major settlement.

Table 3.1 - Bus Frequencies

Destination	Service	Weekday Frequency		
		AM Peak (08:00-09:00)	PM Peak (17:00-18:00)	Daily (In each direction)
Internal	700/S1	1	1	4-5
Internal/Great Cornard	5	2	2	20 (one way)
Colchester	84	1	1	10
	753	1	1	11
Bury St Edmunds	753	0	1	11
Ipswich	91	1	1	12
Halstead	11/12/13	1	1	13
Haverhill	236	1	1	11
Long Melford	716	1	1	15

Sudbury rail station has an hourly service running in each direction to and from Marks Tey, a journey which takes approximately 20 minutes. These services run between approximately 0530 and 2330 with a full timetable shown in Appendix B. Marks Tey provides a rail service to London and Colchester with trains every 20-30 minutes.

Although bus services operate along the key corridors in Sudbury, and provide a good coverage of the town and surrounding areas, these routes and those to the key settlements of Ipswich and Bury St Edmunds are infrequent, with at most two services but more typically one per hour on any route. The quality of the bus service is also hampered by the lack of real time information and the poor facilities at the bus station. In the event that growth comes forward to the north and east of the town, improvements will be required, either through the provision of new bus routes or, more likely, an increase in frequency of existing services to ensure public transport is seen as a viable alternative to car use.

3.4 Highway Network

As shown in the site location plan, Sudbury benefits from strong road connections, with the A134 providing access to Bury St Edmunds to the north and to the A12 and Ipswich, via the A1071, to the east. To the south, the A131 provides access to Braintree in Essex. Within Sudbury, the A131 and B1508 form arterial corridors into a gyratory system around the town centre, segregating it from other retail and transport facilities to its south-east. The A134 bypasses the town centre to the north but provides connections to the northern A131 routes into the town.

The level and nature of traffic flows in Sudbury has long been identified as an issue. As indicated above, the one-way system is often seen not to mitigate but contribute to the problem, through increased congestions associated with vehicles having to use it rather than take a more direct route, either into the town centre or through it and onto other destinations. This is perhaps best emphasised by vehicles travelling through Sudbury southbound along the A131, instead of being able to continue straight on this road, this traffic must also negotiate Girling Street, the East Street and Belle Vue junctions and continue along the Kings Street / Market Hill 'high street' area before leaving the town centre. Data obtained from the ANPR surveys undertaken in 2009 indicates that approximately a fifth of traffic entering the town from the A131 is through-traffic and thus performing this manoeuvre.

This has a knock-on effect of increasing traffic flows through key junctions, in particular Belle Vue, increased journey distances and congestion leading to greater traffic related emissions and pollution, as well as causing severance issues for pedestrians and safety concerns for more vulnerable road users.

Although during the site visit there was not any particular evidence of peak hour congestion on the key routes in the town, as the day progressed queues were noted along Market Hill / King St, heading back towards Belle Vue. These delays appeared to be caused by a combination of vehicles manoeuvring into parking spaces, the pedestrian crossing by St Peter's Church and by vehicles slowly merging along King Street. Although safety concerns have previously been expressed about the Market Hill / King Street merge / diverge, recent accident records do not indicate any particular safety issues.

While previous studies have indicated that introducing two-way operation may provide a solution, a high level review suggests that although some two way operation is possible, there are a number of constraints for HGV passing, and the environmental problems are likely to worsen; Gainsborough Road does not have sufficient width to accommodate two way flows while there are significant constraints (both engineering and potentially politically) on alternative routes considered to provide an opposing southbound route through this area. In our view, while there may be sufficient width to accommodate two way operation along Girling Street, the benefit of this to the town centre would be limited by the single direction operation on Gainsborough Road while also having potential capacity constraints. In light of these issues it is considered that mitigating the impacts through the delivery of traffic calming and shared space schemes would be preferable.

Approach to the Belle Vue Junction from Newton Road

Poor visibility from Ingram's Well Road onto Newton Road

Linked to this is the issue of rat-running through local residential streets. While a product of the wider gyratory it is perhaps most obviously linked to the arrangements at the Belle Vue roundabout, where traffic is not permitted to travel northbound towards Newton Road. Vehicles from Great Eastern Road which wish to travel eastbound along Newton Road can either:

- Travel the entire length of the gyratory
- Use the small loop involving King Street, East Street and Girling Street,
- Travel along Cornard Road and then use either Ingram's Well Road or Cat Lane to access Newton Road.

The latter of these options has been the subject of complaints from local residents. There are particular concerns relating to Ingram's Well Road, where increased traffic flows pose particular safety issues as this provides an access to Belle Vue Park, there is a general lack of footpaths and there is poor visibility for vehicles attempting to turn out of the road onto Newton Road.

A review of the ANPR data from 2009 indicates that just over 40 vehicles in the AM peak and approximately 90 vehicles in the PM peak use one or the other of these roads to rat run. This accounts for over a third of northbound trips on Ingram's Well Road and between a sixth and a quarter of northbound journeys on Cat's Lane.

Given the current Belle Vue alignment, future development would be anticipated to increase the flows on these roads. In light of the limitations of alterations to the one-way system, alternative traffic management and modal shift measures may be required to minimise the impact of rat running in this area. It is noted however that the current geometry of these roads and on-street parking restrict two-way flow, while the junction visibility issues on Ingram's Well Road will help to discourage people from using these routes.

The high traffic flows into the town centre have also previously been linked to the availability of significant levels of both short and long term parking within the town centre. Anecdotal evidence has indicated that recent schemes to introduce 3 hour time limits in selected areas and the introduction of a £1.50 charge for stays of longer than 3 hours has not led to a significant reduction in parking and resulted in increased incidences of illegal on-street parking.

The current availability of parking can act as a major constraint to significant mode shift. There is currently however a lack of an evidence base to draw strong conclusions about impact of parking charges / reduced availability on a) reduced vehicle trips b) viability of town centre.

3.5 Committed Transport Schemes

This study will look to identify a range of schemes which will help to alleviate these issues, deliver sustainable future growth and achieve mode shift on existing movements. Previous work by SCC as part of LTP3 established a range of potential measures which could be introduced. A limited budget for these measures has been identified in the short term, with the LTP3 noting an indicative level of investment for Sudbury of approximately £450,000 up to 2015, although this could be matched for each period through to 2031. It is understood however that in fact total funding of £500,000 through LTP3 has already been allocated for two of the previously identified schemes, the introduction of shared space on Market Hill and provision of two raised crossings on King Street by the diverge, with the latter of these to be completed during the 2011 / 12 financial year.

In addition to these schemes, the only other measure with confirmed funding is a pair of puffin crossings on Girling Street on approach to Belle Vue. This has come from S106 contributions associated with the Sainsbury's development on Cornard Road and, as set out above, will help to provide a crossing facility on a key pedestrian desire line between the town centre and the east of Sudbury. It is also understood that funding may also be available through the same source for upgrading the footpath between Cornard Road and Newton Road alongside the development. This would also address an important gap in pedestrian connectivity in this area and, subject to the confirmation of the S106 agreement, both would be expected to be delivered in the shorter-term.

Further details relating to these schemes are provided in Section 5.

4 Sudbury Future Growth - Trip Generation & Distribution

4 Sudbury Future Growth - Trip Generation & Distribution

4.1 Overview

The Babergh LDF is intended to set the planning context and policy for the delivery of growth in the district up to 2031. A study was undertaken by AECOM in 2010 to inform the development of the LDF Core Strategy and identify the potential transport impacts of alternative broad locations of residential development, considering development locations in Sudbury, Hadleigh and Ipswich Fringe. Since this report was completed, however, the Government has announced their intention to revoke Regional Spatial Strategies. Given the prospective removal of these regional development targets, the future growth levels for the district have been revisited and the Babergh Core Strategy Submission Draft document identifies that the growth target for Sudbury will be reduced to in the region of 850 dwellings.

As part of this study, AECOM have been requested to undertake a high level review of the potential transport impacts associated with proposed growth areas in the town. As well as the LDF housing allocation, this would include two other development areas which had been previously identified; the mixed-use development at Chilton and the commercial development at County Farm (East).

Following discussions with BDC, a main test scenario has been identified, reflecting anticipated levels and patterns of growth in and around Sudbury and consistent with the emerging Core Strategy.

An initial exercise has been undertaken to set out the potential vehicular trip generation and highway network assignment of this level of growth given the relevant land uses. This section provides a summary of the key information and assumptions associated with the developments' trip generation and distribution, with a short commentary identifying the relative impacts on traffic flows at critical junctions and highway corridors. More detailed information relating to the calculation of the trip rates, trip generation, distribution and assignment is provided in Appendix C.

4.2 Development Areas

4.2.1 Mixed-Use Development at Chilton

Identified in the Local Plan as a key strategic site, the potential Chilton mixed use development area is located to the north of existing residential, retail and employment properties along the A134 Springlands Way, to the west of the B1115 Waldingfield Road. Although there have been various previous attempts to bring this site forward for development, it is now understood that a planning application for the site, known as Chilton Woods, may be submitted in the short-medium term, with a masterplan being produced by Redrow plc. It should be noted that, although providing an emerging picture of the developer's proposals, the masterplan and associated access strategy have yet to be agreed with the local planning or highway authorities.

The Local Plan identified that approximately 700 dwellings could be provided on this site. The emerging Core Strategy however indicates that as part of the LDF allocation, a further 350 dwellings could be provided, in addition to the original 700 households. The emerging masterplan for Chilton Woods is broadly consistent with this and identifies some 1000 dwellings on the site.

Again broadly consistent with the Local Plan, some 20ha of employment land has also been identified in the masterplan, with approximately 15ha located within the main site immediately to the north of the A134, with a smaller parcel of approximately 5ha to the north-east corner of the site.

The Local Plan also identified the need to provide various associated education, retail and community provision within the site. The current masterplan proposals include the provision of a new primary school, neighbourhood shopping centre and community centre.

Various potential points of vehicular access have previously been considered including via the existing Tesco Roundabout to the west and to the east either via Acton Lane or from the Waldingfield Road / Church Field Road roundabout (Aubrey Drive), with the Local Plan policy identifying a new distributor road through the site linking the Tesco roundabout and Audrey Drive. The emerging masterplan proposals include the provision of a new junction onto the A134 to the west of the existing Tesco roundabout, identified primarily for employment vehicles. Further access points to the development area would be through Acton Lane, potentially a car–free route and Aubrey Drive for residential vehicle movements, subject to capacity requirements. It is anticipated that Acton Lane, which would run through the centre of the site north to south, would have new access restrictions,

with general traffic prohibited from accessing it via the A134, although access for pedestrians, cyclists, buses and emergency vehicles would be retained.

For the purposes of this study, access to Aubrey Drive and into the A134 has been assumed. Access arrangements would be subject to detailed examination at planning stage and these assumptions are considered reasonable for the purposes of this study.

4.2.2 Land at County Farm (East)

Located to the north of Church Field Road, the County Farm (East) Site is proposed to provide approaching 26,000sqm of mixed employment development on a site of approximately 6.7ha. A planning application was submitted on behalf of a private developer in August 2009 and it is understood that the application is still under consideration. A Transport Assessment and subsequent technical addendum have been submitted in support of the application. Although not clearly set out in the report, the trip generation analysis indicates that it is intended that there will be some 23,000sqm of B8 warehouse land use, with the remainder of the site split between standard B1 offices and a call centre, at a ratio of 60:40. The report also indicates that vehicular access to the site would be from Church Field Road.

4.2.3 East of Sudbury (LDF Allocation)

As set out in the overview, in addition to the development identified above, it is proposed that further residential growth in Sudbury will be provided to the north-east of the town. Following discussions with the client team, for the purposes of this study AECOM are to assume that this growth would be accommodated on either side of the A134 Newton Road, from which vehicular access would be provided, and extending from the current urban boundary. This site is assumed to accommodate the remaining LDF housing provision, not provided on the Chilton mixed-use site, potentially in the region of 500 - 550 dwellings.

The broad location of the development areas are shown in Figure 4.1. These represent the principal growth areas in the medium term for Sudbury and existing and future transport issues are considered in the context of this growth.

4.3 Development Assumptions and Scenarios

4.3.1 Main Test Scenario

AECOM have been requested to consider the impact of the general levels of development anticipated in Sudbury up to 2031. Our analysis assumes that there will be the development of some 1,550 dwellings within Sudbury, of which 1,050 would be provided on the Chilton mixed use development and accessed via Aubrey Drive with the remaining 500 provided on a new site to the north-east of the town, accessed from Newton Road. In total, 89,100sqm GFA of employment land use has been assumed as part of the mixed-use development with a combination of B1 office, B1(c) / B2 industrial and B8 Warehousing uses. For the purposes of our assessment we have assumed the employment proposals put forward by the emerging Chilton Woods Masterplan team as a likely indication of the form of employment which would comprise the 20ha identified for this area within the core strategy. This would be split between the main site, to be accessed primarily from the new A134 junction, and the north-east of the Chilton development and accessed from the B1115 Waldingfield Road.

It should be reiterated that, although providing an emerging picture of the developer's proposals, the Chilton Woods masterplan and associated access strategy have yet to be agreed with the local planning or highway authorities. Whilst we have adopted aspects of the development quantum and access strategy for the purposes of the analysis in this study, this has been done on a 'without prejudice' basis and should not be assumed to reflect BDC or SCC approval of the current proposals.

Additional employment development has also been considered in the form of the County Farm (East) site. For the purposes of this report, it has been assumed that all vehicles associated with this development access the main highway network via the B1115 Waldingfield Road / Church Field Road roundabout.

A summary of the assumed development associated with the main test scenario is provided below:

- Residential
    - Chilton Mixed Use Development: 1050 dwellings (accessed via Aubrey Drive)
    - East of Sudbury: 500 dwellings (accessed via A134 Newton Road)
- Employment
    - Chilton Mixed Use Development [CP01(b)]: 65,722sqm (accessed via A134 Springlands Way)
    - Chilton Mixed Use Development [CP01(c)]: 23,378sqm (accessed via B1115 Waldingfield Road)
    - County Farm (East): 25,690sqm (accessed via Church Field Road)

In addition to these primary land uses, additional education, retail and community facilities have been assumed to be provided as part of the Chilton mixed use development, given the scale of anticipated development in this area and consistent with the emerging Chilton Woods masterplan.

At this stage, this is still intended as a high level analysis to identify the broad impact of future growth in Sudbury. In particular the access arrangements assumed for the Chilton mixed use development would need to be agreed with the relevant authorities through the planning process. A single point of vehicular access for the residential development as identified in the emerging Chilton Woods masterplan is not consistent with the relevant Local Plan Policies but does provide a more onerous scenario in traffic concentration terms for consideration in this study. It would be expected that detailed Transport Assessment will be required in support of future planning applications based on more detailed proposals for the relevant sites.

4.4 Development Vehicular Trip Rates

4.4.1 Residential Trip Rates

A base residential trip rate for the development areas in Sudbury has been identified using an appropriate analysis of the TRICS survey database. More information relating to the site selection and calculation of the relevant trip rates is provided in Appendix C.

This initial calculation assumes that all trips generated by these land uses will at some point involve leaving either of the sites and creating trips on the local highway network. However, the Chilton mixed-use development would be expected to incorporate a mix of residential and employment land uses, as well as a range of other facilities. It would therefore be expected that some trips, particularly work and education trips given the proposed employment and education land uses, would remain contained within the site and not lead to additional trips on the highway network. Although not specified at this stage, it is also anticipated that some form of local facilities will be provided within the Sudbury East site, and while unlikely to be an extensive as those associated with the Chilton area, these could also result in the containment of a proportion of the trips.

More details relating to the assumptions which have been made regarding local containment are provided in Appendix C. The resulting “external” trip rates associated with the Chilton and Sudbury East sites are set out in Table 4.1 below.

TRICS has also been consulted to identify suitable trip rates for B1, B1(c) / B2 and B8 land uses. Details relating to the site selection process for these uses are provided in Appendix C. As noted above, the provision of residential and employment land uses at the Chilton site is likely to mean some people both living and working within the development and leading to the containment of some trips within the site. An adjustment has therefore been made to the employment trips at Chilton to reflect that applied to journey to work trips for the residential uses and provide an appropriate external trip rate. The relevant trip rates obtained from the TRICS database, and adjusted for the containment factor, are also contained in Table 4.1.

As noted before, there is an outstanding planning application associated with the development site at County Farm East, with an associated Transport Assessment (TA) identifying the proposed trip generation of the site. A review of the trip rates that have been identified as part of this study indicate that they are generally lower than those identified in the TA. For the purposes of this study, the trip generation associated identified for the site within the TA has been used, with the appropriate trip rates included in Table 4.1. Further details relating to the process for identifying the relevant trip rates is provided in Appendix C.

Table 4.1 –External Trip Rates by Development and Land Use (Car Driver)

Development Area	Land Use	AM Peak			PM Peak		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Chilton Mixed-Use Site	Residential (per dwelling)	0.102	0.331	0.433	0.301	0.206	0.507
	B1 Office (per 100sqm)	1.571	0.115	1.686	0.083	1.279	1.362
	B1(c) / B2 Industrial (per 100sqm)	0.481	0.189	0.670	0.110	0.352	0.462
	B8 Warehouse (per 100sqm)	0.127	0.050	0.177	0.075	0.126	0.201
County Farm (East)	B1 Office (per 100sqm)	1.678	0.244	1.922	0.234	1.537	1.791
	B1 Call Centre (per 100sqm)	3.000	0.333	3.333	0.792	1.708	2.500
	B8 Warehouse (per 100sqm)	0.177	0.104	0.281	0.170	0.188	0.358
East of Sudbury	Residential (per dwelling)	0.145	0.469	0.614	0.334	0.229	0.563

4.4.2 Trip Distribution

In line with the approach taken in the 2010 LDF study, journey to work statistics have been taken from the 2001 census in order to identify the origin and destination of car driver trips to / from the different areas. For residential journeys to and from the Chilton and East of Sudbury sites, the distribution of trips originating in the Sudbury North and Great Cornard North wards respectively have been used. For employment trips, the work journey distribution for Sudbury North has been used for both Chilton parcels and Sudbury East used for the development at County Farm East. Table 4.2 below summarises the distribution of trips for each of the growth areas. Further details relating to the distribution of these trips and their assignment to the highway network are provided in Appendix C.

Table 4.2 – Car Driver Trip Distribution

	Growth Area	Chilton Site		County Farm East	East of Sudbury
	Ward	Sudbury North		Sudbury East	Gt Cornard North
Direction	Corridor	*Res*	*Emp*	*Emp*	*Res*
North	A134 Towards Bury St Edmunds	20%	23%	18%	14%
North East	B1115 - Waldingfield Rd	9%	11%	11%	7%
East	A134 Towards Hadleigh, Ipswich and Colchester	14%	11%	17%	15%
South East	B1508 Towards Colchester	1%	2%	2%	2%
South	A131 Towards Halstead and Braintree	14%	10%	11%	10%
Sudbury North	Various	13%	20%	7%	4%
Sudbury South	Town Centre Gyratory	13%	6%	5%	18%
Sudbury East	Various	14%	4%	10%	18%
Great Cornard	Shawlands Avenue	3%	13%	19%	13%
Total	-	100%	100%	100%	100%

4.5 Development Trip Generation and Impacts – Main Test

4.5.1 Residential Growth

Table 4.3 below identifies the residential trip generation associated with the provision of 1,050 dwelling at the Chilton site, based on the 700 units identified in the Local Plan with an additional 350 units from the LDF allocation, and the provision of the remaining 500 LDF units at the new site to the north-east of Sudbury. In total, an additional 760 AM peak trips and 815 PM peak trips would be expected to be created on the local highway network.

The Chilton area is being promoted as a single site, with great potential for the development to be delivered as mixed use development, with employment and residential uses coming forward together, which would maximise the potential for the onsite containment of trips as described above. For the purposes of this study this has been assumed to be the "design case" and would be the result once the area is fully developed, including the associated education, retail and community facilities. An alternative phasing approach would require a more onerous review in terms of traffic generation, particularly for the earlier phases of the development, and this is an issue that would need to be dealt with through the planning process.

Table 4.3 – Residential Growth Trip Generation (Car Driver)

Location	Units	AM Peak			PM Peak		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Chilton Mixed-Use Site	1050	107	347	454	316	217	533
East of Sudbury	500	72	234	306	167	115	282
Total	***1550***	***179***	***581***	***760***	***483***	***332***	***815***

The assignment of these trips on the highway network and the proportional increase in flows on key links compared to 2009 surveyed traffic levels are shown in Figures 4.2 – 4.3. As would be expected given the location of the growth areas, there would be expected to be significant increases in the level of traffic flows in and around the A134 Springlands Way / Northern Road / Newton Road, with increases typically in the range of 6 – 25%, and approaching 45% on the A134 Newton Road approaching the Northern Road Roundabout. The greatest increases would be expected on the B1115 Waldingfield Road between the A134 and Aubrey Drive Roundabouts, with between 430 and 510 extra vehicles using this link in each of the peaks. There would also be additional pressure placed on the town centre gyratory with an extra 170 vehicles entering the gyratory from the north and east in the AM peak at the East Street / Girling Street and Belle Vue junctions.

4.5.2 Employment Growth

Table 4.4 identifies the additional car driver trips on the highway network associated with the proposed employment growth in Sudbury. Figures 4.4 – 4.5 identify the resultant external trips on the highway network. From the approximate 115,000sqm employment GFA, there would be anticipated to be an additional 870 AM peak vehicle trips and 720 PM peak vehicle trips on the highway network. Again, it should be noted that the Chilton vehicle flows reflect the anticipated trip generation associated with a fully developed mixed use site, with some trips contained within the growth area, and an alternative phasing approach where residential and employment uses did not come forward together would require a more onerous review in terms of traffic generation.

Table 4.4 – Employment Growth Trip Generation (Car Driver)

Location	Land Use	GFA (sqm)	AM Peak			PM Peak		
			Arrival	Departure	Total	Arrival	Departure	Total
Chilton Mixed-Use Site	B1 Office	26,730	420	31	451	22	342	364
	B1(c) / B2 Industry	35,640	172	67	239	39	126	165
	B8 Warehousing	26,730	34	13	47	20	34	54
County Farm East	B1 Office	1,610	27	4	31	4	25	29
	B1 Call Centre	1,080	32	4	36	9	18	27
	B8 Warehousing	23,000	41	24	65	39	42	81
Total	***-***	***114,790***	***726***	***143***	***869***	***133***	***587***	***720***

As with the residential growth, additional flows would be expected to focus on the A134 and B1115 corridors, particularly around the roundabout between these two roads, with increases in flows at this junction of the order of 470 – 560 vehicles in each of the peaks. However, the flow levels around the gyratory would be anticipated to be more limited than those associated with the residential growth.

4.5.3 Combined Growth

Based on the analysis above, Table 4.5 below sets out the trip generation associated with the combined residential and employment growth identified in Sudbury. This indicates that there would be anticipated to be in the region of 1,630 additional vehicle trips in the AM peak and 1,535 in the PM peak associated with the growth areas.

Table 4.5 – Combined Growth Trip Generation (Car Driver)

Location	Size	AM Peak			PM Peak		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Residential	1550 units	179	581	760	483	332	815
Employment	114,790sqm GFA	726	143	869	133	587	720
Total	***-***	***905***	***724***	***1629***	***616***	***919***	***1535***

Figures 4.6 – 4.7 identify these combined flows on the highway network. This reiterates the trends shown in the individual land use assignment diagrams, with increases in single directional flows of up to two-thirds along the A134. The B1115 Waldingfield Road would witness an increase in two-way flows of about 800 vehicles in the AM peak and in the PM peak between the two roundabouts, equivalent to 95% and 90% increases in the flows compared to 2009 levels respectively. To a lesser extent, although still potentially significant, traffic flows entering the town centre gyratory at the sensitive Girling Street / East Street and Belle Vue junctions would be expected to increase by approximately 200 vehicles in each of the peaks.

With the exception of Melford Road and the B1508 Cornard Road, all other corridors identified are anticipated to witness at least a 10% increase in traffic flows. While there are not anticipated to be particular concerns with individual link capacities, the additional traffic flows identified would be expected to put significant additional pressure on the roundabout junctions between Newton Road / Northern Road, A134 / Waldingfield Road and Waldingfield Road / Aubrey Drive / Church Field Road. While the County Farm (East) Transport Assessment identified that there is some spare capacity in the latter two of these junctions, the Newton Road / Northern Road junction was predicted to be operating close to capacity in future scenarios.

This indicates that the proposed levels of growth in Sudbury, without a suitable sustainable transport strategy, would be expected to put significant additional pressure on the local highway network and a number of key junctions. Even with a range of measures which are designed to increase the attractiveness of sustainable modes of transport, it is likely that suitable traffic management measures will need to be considered to minimise the impact of any residual traffic. This would include identifying suitable access strategies for the growth areas to dilute the impacts on the highway network and the need to provide focussed capacity improvements at key junctions, even allowing for future traffic flow reductions through mode shift. These capacity improvements would not be to promote car access to the development areas, but rather prevent severe capacity issues affecting emergency access, commercial traffic or impinging bus movement.

It should also be noted that this trip generation analysis includes a reduction for locally contained trips as a result of the mixed use nature of the proposed development at Chilton and an assumption of limited local facilities being provided in a new residential growth area to the north-east of Sudbury. As such it will be important that the development of these complimentary land uses and facilities comes forward together to ensure that the potential for containing these trips, and therefore reducing the impact on the highway network, is maximised.

Given the high level nature of this study and the relative progress of the various development areas, a number of assumptions have had to have been made regarding land use, quantum and access. These will need to be more fully assessed and addressed through the planning process with Transport Assessments produced in support of more detailed and confirmed proposals.

4.6 Development Trip Generation and Impacts – Sensitivity Testing

In advance of the approval of the Core Strategy Submission Draft, a series of scenarios for residential and employment growth in Sudbury were identified for potential analysis. While these have been superseded by the Main Test based on information that has subsequently been made available, these scenarios have been retained as sensitivity tests to be considered against the main test scenario. Information relating to the analysis and results of the sensitivity testing is provided in Appendix D.

5 Emerging Strategy & Measures

5 Emerging Strategy & Measures

5.1 Overview

The development of a transport strategy for Sudbury needs to consider the best way of maximising the operation of the existing transport networks and identify key interventions which will help to improve current transport connectivity and also facilitate future growth.

As has been identified in this report, there are a number of historic transport issues, mainly associated with the one-way system and pollution in the Cross Street AQMA, which are considered to have a significant negative impact on Sudbury, contributing to high traffic flows, poor air quality and aesthetics and a car dominated town centre which severs pedestrian and cyclist movement.

Previously the development of a Western Bypass, to run between Ballingdon and the Melford Road Junction, has been proposed to mitigate some of these issues. This formed an integral part of a wider strategy to alleviate these transport issues in combination with town centre traffic management, including alterations to the one-way system, improvements to the pedestrian and cycling networks and the introduction of a new car parking strategy for the town centre.

A bid for funding for the Western Bypass was rejected in 2003, primarily on environmental grounds. Since this time, the environmental mitigation requirements associated with a major infrastructure scheme have increased while the availability of funding for such schemes has reduced. The costs associated with the scheme at the time of the bid were in excess of £20m. This could not be expected to be funded through development contributions in light of the projected growth levels and the proposed location of the growth. Any central funding is unlikely to be available in the short to medium term.

On the assumption that the Western Bypass does not come forward in the short to medium term, consideration has also been given to the potential to make changes to the gyratory to introduce two-way operation along Girling Street and Gainsborough Road, while introducing a northbound movements at the Belle Vue junction. These measures would be expected to reduce the amount of traffic forced to circulate the town centre with lower traffic flows along King Street and Market Street. This would provide increased scope to improve the pedestrian environment, while generally reducing travel distances and emissions as well as limiting the use of Ingrams Well Road and Cats Lane for rat running.

A high level review has however indicated that Gainsborough Road does not have sufficient width to accommodate two way flows while there are significant constraints (both engineering and potentially politically) on alternative routes which could provide an opposing southbound route through this area. It was also considered that while there may be sufficient width to accommodate two-way operation along Girling Street, the benefit of this to the town centre would be limited by the continued single direction operation on Gainsborough Road, as well as there being potential capacity constraints. This should also be considered in the context of previous technical studies of the Belle Vue junction which were unable to identify a scheme which was likely to remain within capacity with future traffic growth and which would deliver the desired improved pedestrian facilities and a northbound movement at the junction.

5.2 Scope for Mode Shift in Sudbury

The previous section considers the potential impact of the proposed future growth levels, both LDF and other development sites, in terms of highway flows. This indicates that there is anticipated to be considerable additional pressure put on a number of key links and junctions, both on the main corridors into and around the town and the town centre gyratory itself. Facilitating this growth through traffic capacity based solutions is not sustainable. Given the significant engineering and political hurdles associated with major changes to the gyratory, the costly nature of potential solutions and the poor feasibility of potential improvements it is considered that exploring smaller scale interventions designed to mitigate localised issues and promote non-car modes would be more effective, particularly in the short term.

As identified previously, Sudbury is a relatively concentrated settlement, with the majority of the town within 2 km of the town centre. Sudbury is identified as a key employment, retail and services location within Babergh and it is noted in the emerging core strategy that the western part of the district is *"relatively self-contained in relation to the influence of, and potential dependence upon, Ipswich."* This is reflected in the travel patterns in the town with previous studies noting that the vast majority of trips accessing Sudbury and Great Cornard have final destinations in the area, with low levels of through traffic identified. This

trend is supported by census journey to work data which indicates that over 40% of people in Sudbury and Great Cornard travel less than 2km to work, double the average level for England.

It is generally accepted that reasonable commuting distances for walking and cycling are up to 2km and 5km respectively, although these distances reduce considerably for access to local facilities such as schools, local shops and healthcare. Delivering Quality Places, Urban Design Compendium 2, English Partnerships, The Housing Corporation, Sept 2007 lists 800m and 3km as acceptable walking and cycling distances to local services.

As set out in Section 3, despite the relatively concentrated nature of Sudbury and Great Cornard, 2001 journey to work census data indicates that a relatively high proportion of people living in Sudbury drive to work. Having discounted people who work from home, 62% of people living in Sudbury drove to work, compared to 60% across England and 56% in Ipswich.

A comparison of the overall mode split for travel to work trips in Sudbury against the overall mode split for Ipswich and England is provided in Table 5.1.

Table 5.1 – Journey to Work Mode Splits

Mode	Sudbury	Ipswich	England
Underground, metro, light rail, tram	0%	0%	3%
Train	1%	2%	4%
Bus, minibus, coach	3%	11%	9%
Motor cycle, scooter or moped	1%	2%	1%
Driving a car or van	62%	56%	60%
Passenger in a car or van	9%	8%	7%
Taxi or minicab	1%	0%	1%
Bicycle	4%	6%	3%
On foot	18%	15%	11%
Other	0%	0%	0%
Total	***100%***	***100%***	***100%***

*Source: 2001 Special Workplace Statistics (adjusted for working from home)

As noted above, there should be particular scope for encouraging more sustainable transport behaviour for shorter journeys. A comparison of the mode shares associated with journeys of less than 2km however still indicates that there is a higher reliance on the car within Sudbury, with 43% of people driving to work despite the short distances involved. This compares to 37% of similar trips in Ipswich and 39% nationally. Both walking and cycling mode shares are lower than Ipswich while bus trips are significantly lower than both Ipswich and the national average. This information is shown in Table 5.2 below.

Table 5.2 – Journey to Work Mode Splits (Journeys less than 2km)

Mode	Sudbury	Ipswich	England
Underground, metro, light rail, tram	0%	0%	0%
Train	0%	0%	0%
Bus, minibus, coach	2%	7%	5%
Motor cycle, scooter or moped	1%	1%	1%
Driving a car or van	43%	37%	39%
Passenger in a car or van	8%	6%	6%
Taxi or minicab	1%	0%	1%
Bicycle	7%	9%	6%
On foot	37%	38%	40%
Other	0%	0%	1%
Total	***100%***	***100%***	***100%***

*Source: 2001 Special Workplace Statistics (adjusted for working from home)

Building upon this, further analysis has been carried out to determine the mode split for journeys between each of the five main census wards in Sudbury and Great Cornard. This provides more detailed information relating to the movements within Sudbury. While this increases the potential distance of journeys, the vast majority of these will be under 2km and given that these trips will generally be limited within the urban settlement, there would be expected to be a similar scope for sustainable transport behaviour across the board, assuming targeted measures within the town. These trips represent the greatest volume of commuter trips and would be the most effective focus of sustainable transport interventions. The trips which stay within the five wards make up 62% of all census journey to work trips which originate in Sudbury and Great Cornard. The analysis is presented in Table 5.3 below.

Table 5.3 – Internal Sudbury Journey to Work Trips

	Great Cornard North	Great Cornard South	Sudbury East	Sudbury North	Sudbury South	Overall
Car driver	52%	61%	43%	49%	43%	50%
Walk	25%	14%	38%	33%	41%	30%
Car passenger	10%	11%	9%	9%	6%	9%
Bicycle	7%	7%	5%	5%	7%	6%
Bus	4%	4%	2%	2%	2%	3%
Taxi	2%	1%	2%	1%	1%	1%
Motorcycle	1%	1%	0%	1%	1%	1%
Other	1%	1%	1%	1%	1%	1%
Total	***100%***	***100%***	***100%***	***100%***	***100%***	***100%***

*Source: 2001 Special Workplace Statistics (adjusted for working from home)

As demonstrated in the previous tables, although the trips in question are relatively short in nature, there is a high reliance on car driver trips, which is identified as closer to 50%, greater than that identified in the 2km analysis. The mode share for car drivers in Sudbury varies between 43% and 49% while in Great Cornard it is greater, between 52% and 61%. The analysis also demonstrates that bus usage is very low for internal trips, 1% in Sudbury and 3-4% in Great Cornard. As identified in Figure 3.5,

although there is a relatively good spread of services, the frequency of each service is quite low. For example the two internal Sudbury and Great Cornard bus services, routes 5 and 700, have peak frequencies of 2 and 1 per hour respectively.

While the greater car mode shares for the Great Cornard wards may be expected given the relative geographical location compared to the town centre, this does not mitigate the fact that the vast majority of the residential areas within these wards are within a comfortable walking distance, and all within an easy cycling distance, of the town centre. It also suggests that there is poor connectivity to the nearby employment at the Chilton Industrial Estate as well as to the town centre. Although perhaps to a lesser extent, the same is true of the Sudbury North Ward.

When comparing the car mode shares for both journeys under 2km within Sudbury and those made between the wards in relation to short journeys made within Ipswich, this suggests that there may be scope to achieve a reduction of some 14% - 26% in local car trips with suitable mitigation measures addressing the issues which have been identified.

The analysis above shows there is significant potential to reduce existing and future traffic demand in Sudbury through the promotion of sustainable travel options, with local trips representing the greatest potential for reducing car mode share. It is considered that walking and particularly cycling can form a significant proportion of trips towards the town centre given suitable infrastructure improvements, travel behaviour and demand management strategies while public transport should also provide a viable alternative, both for internal trips and those to nearby key settlements, such as Ipswich and Bury St Edmunds.

The provision of local services and co-locating of jobs and housing will also greatly improve the patterns of travel emerging from future development areas, reducing the duration of trips and the need to drive.

5.3 Potential Measures

5.3.1 Introduction

The study has highlighted a number of barriers which if addressed could influence a mode shift away from private car use:

- Gaps in the pedestrian and cycling network in general;
- Limited permeability for pedestrians and cyclists in the town centre;
- Lack of convenient cycle parking;
- Limited frequency on existing bus services;
- Poor awareness of car sharing tools;
- Poor awareness of available options and the benefits of more sustainable options; and
- Extensive free parking throughout the town, encouraging car use.

A range of potential measures and interventions have been identified to address these gaps in provision and encourage more sustainable transport behaviour. This builds upon work undertaken as part of the LTP3 process. The full list of improvements is set out in detail in Table 5.4, categorised as to whether they are:

- Walking / Cycling Improvements
- Public Transport Improvements
- Influencing Travel Behaviour Initiatives
- Traffic Management Measures

The majority of these improvements, principally the walking and cycling measures, are shown in Figure 5.1. The ranges of costs identified in Table 5.4 at this stage are purely indicative based on a very high level analysis of the type and extent of the potential schemes. These would need to be reviewed as more detailed information is developed relating to the design of the measures.

These improvements are aimed at addressing both current gaps in the network and also providing connections to the future development areas to the north and east of Sudbury. These are preliminary recommendations at this point in time, and further work / preliminary design will be required to confirm their feasibility. This will include confirming issues such as land ownership, topography / structural requirements and emerging access proposals for the development sites.

Junction modelling work will also be required to confirm the requirement and feasibility of remedial measures to increase capacity at key locations, including the Waldingfield Road / Church Field Road / Aubrey Drive, Waldingfield Road / Springlands Way / Northern Road and Newton Road / Northern Road roundabouts and the East Street / Girling Street and Belle Vue junctions.

5.3.2 Prioritisation

In considering the prioritisation of schemes, it will be important to ensure that measures which encourage sustainable transport behaviour associated with the new development are in place prior to occupation to influence travel behaviour before patterns become established. However, consideration should be given as to how to maximise the impact of potential investment in schemes, and as such prioritisation should be given to interventions which are considered to not only benefit new development but also maximise the potential for encouraging modal shift in existing travel.

An initial exercise has been undertaken to identify the prioritisation of the schemes identified. This is intended to reflect the relative importance of the schemes in addressing existing transport issues and unlocking the growth areas, while also considering the potential relative costs, delivery and feasibility of the schemes. This will need to be reviewed and updated as more information is available relating to the programme for growth, the development of the CIL process / availability of funding and the detailed feasibility of schemes.

The prioritisation identified in this study is based on a ranking system of 1 to 4, with those measures which are considered as having the greatest priority ranked as 1. This ranking has been informed by how each scheme performs against two key criteria:

- Effectiveness:
    - High – Considered vital for achieving significant mode shift (will principally be linked to the growth areas and / or to improve a particular existing issue, particularly along the key corridors between the growth areas and the town centre)
    - Medium – Considered important to achieving significant mode shift (these will tend to be improvements away from the main corridors but which are still considered to serve main destinations, both for existing movements and those associated with the growth areas)
    - Low – Will contribute to achieving mode shift (mostly these will be smaller localised schemes and which will have more limited benefit to the growth areas.
- Cost & Feasibility
    - Good – will include where funding has been identified, where this could come forward as an integrated part of site design / another scheme or is generally considered low cost with minimal anticipated feasibility issues.
    - Average – Typically higher cost schemes or key schemes where there may be feasibility issues about full delivery
    - Poor – Concerns relating to the relative costs of the scheme or its feasibility
    - Unknown – Where sufficient details are unavailable to properly comment on a scheme

Measures which are considered to be necessary in part or in full to mitigate the impacts of the future growth or to enhance the sustainability of the future developments are separated and identified within Table 5.4, which also notes the relative criteria grading and overall rank of each scheme.

Table 5.4 – Identified Transport Improvement Measures

	Ref	Category	Location	Measure	Cost	Notes	Effectiveness	Cost / Feasibility	Priority
Scheme supporting Sudbury Growth Areas	1	Walking / Cycling	St Bartholomew's Lane	Surface existing bridleway and convert to shared use	£25,000		**High**	**Good**	**1**
	2	Walking / Cycling	Clarence Road	Widen existing footway from Acton Lane RoW and convert to shared use, with new connection to Clarence Road	£33,000	Will be dependent upon linkages through The Chilton Site but will also improve connections to existing residential areas	**High**	**Average**	**1**
	3	Walking / Cycling	Springlands Way (northern)	Widen footway and convert to shared use. Raise bridge parapets.	£130,000		**High**	**Average**	**1**
	4	Walking / Cycling	Springlands Way (southern)	Widen southern footway and convert to shared use	£65,000		**High**	**Average**	**1**
	5	Walking / Cycling	Waldingfield Road	Widen western footpath to north of Harp Close Road along green and convert to shared use	£35,000 - £84,000		**High**	**Average**	**1**
	6	Walking / Cycling	A134 Springlands Way / Northern Road	Widening of existing footway along southern section of roundabout to shared use or segregated footway / cycleway to connect into other proposals	£15,000 - £36,000		**High**	**Average**	**1**
	7	Walking / Cycling	Newton Road	New puffin crossing in vicinity of Cats Lane junction	£70,000		**High**	**Average**	**1**
	8	Walking / Cycling	Newton Road	New toucan crossing	£75,000		**High**	**Average**	**1**
	9	Walking / Cycling	Newton Road	New footway / cycleway on southern side of Newton Road provided between new toucan crossing and existing facilities to the east of the roundabout	£88,000 - £105,000		**High**	**Average**	**1**
	10	Walking / Cycling	Newton Road	New shared use path on southern side of Newton Road to connect to development area	£81,000 - £195,000	Potential for this and similar facility on the north side will be dependent upon land ownership and tree status.	**High**	**Good**	**1**
	11	Walking / Cycling	Girling Street	Provision of 2x Puffin Crossings on approach to Belle Vue junction	£150,000	Funded through Sainsbury's development - S106	**High**	**Good**	**1**
	12	Walking / Cycling	Belle Vue	Provision of new pedestrian crossings on Great Eastern Road, Cornard Road and Newton Road approaches to junction	£60,000		**High**	**Average**	**1**
	13	Walking / Cycling	Newton Road / Cornard Road	Upgrade existing footpath	£200,000	Potential for Delivery through Sainsbury's development - S106	**High**	**Good**	**1**
	14	Walking / Cycling	Great Cornard Road	New puffin crossing to connect routes to station and improve facilities on Cornard Road on approach to town	£70,000		**High**	**Average**	**1**
	15	Walking / Cycling	Town centre (Various)	Provision of new cycle parking shelters in key locations around town centre including railway station	£19,000		**High**	**Good**	**1**
	16	Walking / Cycling	Development Areas	On-site pedestrian and cycle routes	-	Expect to be delivered as part of site design	**High**	**Good**	**1**
	17	Walking / Cycling	Development Areas	Cycle Parking and changing facilities	-	Expect to be delivered as part of site design	**High**	**Good**	**1**
	18	Walking / Cycling	A134 Springlands Way	New signalised junction incorporating pedestrian crossing facilities at A134 access to The Chilton Site	£175,000 - £225,000	Would be delivered as part of Chilton Growth Area	**High**	**Good**	**1**
	19	Walking / Cycling	A134 Springlands Way	New southern footway / cycleway link from new Chilton site access junction to upgraded shared use link (No 1)	£18,000 - £42,000		**High**	**Average**	**1**
	20	Walking / Cycling	Aubrey Drive / Waldingfield Road	2x toucan crossings to connect existing footway / cycleway network towards the Chilton Site	£150,000		**High**	**Average**	**1**
	21	Public Transport	Bus route improvements	Identification of improved intra-Sudbury bus services, including new / extended routes and increased frequency	£1,500,000	Would probably be delivered through the extension / increased frequency of Route 700. Viability will need to be confirmed - expected this will need to be pump primed initially with view to long-term self sustainability	**High**	**Average**	**1**
	22	Influencing Travel Behaviour	Town Wide	Introduction of Smarter Choices Programme for Sudbury.	£200,000	This would look to promote sustainable transport modes including marketing campaigns and dedicated section on Babergh website. Measures should include promotion of car sharing, sustainable transport plans and timetables, promotion of connections between modes (integrated transport facilities), identification of benefits of sustainable travel and discussions with key employers to identify ways to minimise the impact of business related travel (individual and framework travel plans). Potential for personal travel planning service targeted in areas most likely to be affected by development and related improvements. Could also include aspects such as cycle proficiency training and local services / public transport financial incentives	**High**	**Good**	**1**
	23	Influencing Travel Behaviour	Development Areas	Production of travel plans for new development promoting measures to encourage sustainable travel behaviour	-	To be secured as requirement of planning permission	**High**	**Good**	**1**

	Ref	Category	Location	Measure	Cost	Notes	Effectiveness	Cost / Feasibility	Priority
Scheme supporting Sudbury Growth Areas (Continued)	24	Influencing Travel Behaviour	Development Areas	Land use planning to ensure provision of local facilities (including retail / health / education / leisure) linked to new development and permeable design to minimise need to make external trips, minimise trip duration and maximise potential for short walking / cycling trips. Provision of high quality communications links and live/work units to encourage working from home.	-	Expect to be delivered as part of site design	**High**	**Good**	**1**
	25	Traffic Management	Car Parking Study	Detailed investigation of potential impact of parking demand and trends in Sudbury with a view to identify the potential impacts associated with a reduction in parking provision and introduction of short-term parking charges. This should consider on-street, off-street parking as well as the current provision of lorry parking to the rear of Waitrose.	£150,000	Removal of parking and introduction of parking charges may also provide more scope for increased pedestrianisation within town centre	**High**	**Good**	**1**
	26	Traffic Management	Parking Strategy Implementation & Enforcement	Contribution towards the costs of implementation and enforcement of future Sudbury Parking Strategy		This will ultimately depend on the strategy that is put in place with the contribution reflecting any shortfall in funding not addressed through pricing, penalties or potential advertising.	**High**	**Average**	**1**
	27	Traffic Management	Development Areas	Identification of reduced parking provision for new development within maximum standards but which do not compromise viability of development	-	Expect to be delivered as part of site design	**High**	**Good**	**1**
	28	Traffic Management	Cross Street	Monitoring and development of measures associated with AQMA along Cross Street	-	A number of recommendations are already covered as part of other schemes identified in this study. Feasibility work on Traffic Management schemes is ongoing.	**High**	**Good**	**1**
	29	Traffic Management	Various Junctions	Measures to mitigate residual traffic impacts	£80,000 - £400,000	Consideration to be given to development impact at key junctions and provision of traffic signals (where relevant) and improved pedestrian facilities. Extent of improvements unknown at this stage.	**High**	**Unknown**	**1**
	30	Walking / Cycling	Grenville Road	Widen and upgrade existing ROW to shared use to connect to the Chilton Site and improved Springlands Way connections (No 6)	£36,000 - £87,000	Feasibility question about extent of widening / cost given ditch	**High**	**Poor**	**2**
	31	Walking / Cycling	Acton Lane	Downgrading of Acton Lane south of the Chilton Site to provide for bus and non-motorised users only, with new signalised access junction	£150,000 - £400,000	Feasibility question given impact on access for existing residents on Acton Road	**High**	**Poor**	**2**
	32	Walking / Cycling	Talbot Road	Widen footway for shared use between Talbot Road and Acton Lane	£15,000	Will be dependent upon linkages through but will also improve connections to existing residential areas	**Medium**	**Good**	**2**
	33	Walking / Cycling	Waldingfield Road	Re-space or remove chicane barriers near junction with Waldingfield Road and convert to shared use	£6,000		**Medium**	**Good**	**2**
	34	Walking / Cycling	First Avenue	Convert eastern footway to shared use	£6,000		**Medium**	**Good**	**2**
	35	Walking / Cycling	Church Field Road	Widen northern footway and convert to shared use to connect to County Farm East	£31,000 - £75,000	Could be delivered in part by Church Field Road Health Centre Development	**Medium**	**Good**	**2**
	36	Walking / Cycling	Northern Road	Widen southern footway and convert to shared use	£50,000		**High**	**Average**	**2**
	37	Walking / Cycling	Northern Road	Upgrade existing byway to provide potential shared use route into development area.	£23,000 - £54,000	Potential for this will be dependent upon growth area access strategy, land ownership and tree status.	**Medium**	**Good**	**2**
	38	Walking / Cycling	Valley Walk to Railway Station	Upgrade surface and convert RoW to shared use	£53,000	Feasibility question against widening route to station	**High**	**Average**	**2**
	39	Walking / Cycling	Town centre (Various)	Improved signage for pedestrians and cyclists around town centre	£7,500		**Medium**	**Good**	**2**
	40	Walking / Cycling	North of Chilton	Improvements to the existing Public Right of Ways to the north of the proposed Chilton Development	£100,000	Extents of these will need to be confirmed	**Medium**	**Average**	**2**
	41	Public Transport	Sudbury Bus Station	Provide an improved bus station off Great Eastern Road	£1,000,000	This will depend on how the Hamilton Quarter redevelopment is progressed. May require sizeable contribution depending on viability of proposals	**High**	**Poor**	**2**
	42	Public Transport	RTPI	Provision of Real Time Public Transport Information	£370,000	Cost of this will be dependent upon extent of roll out. This would include technology on buses, central control and bus stop / station. Roll-out on non-internal loops would be of benefit to wider areas and as such funding principals would need to be established.	**Medium**	**Average**	**2**
	43	Public Transport	Bus route improvements	Identification of improved inter-urban bus services, including new / extended routes and increased frequency	£900,000	Targeted frequency improvements on Routes 91 and 753. Viability will need to be confirmed - expected this will need to be pump primed initially with view to long-term self sustainability	**Medium**	**Average**	**2**

	Ref	Category	Location	Measure	Cost	Notes	Effectiveness	Cost / Feasibility	Priority
Scheme supporting Sudbury Growth Areas (Continued)	44	Traffic Management	A134 Traffic Management Measures	A package of measures to reduce speeds along the northern bypass.	-	Given primary route nature of A134, limited interventions are likely to be possible, however signalisation linked to Chilton Growth Area may provide sufficient / suitable mitigation, managing traffic flow and speed.	**Medium**	**Good**	**2**
	45	Traffic Management	Town Centre Signalisation	Consider signalisation of further town centre junctions and upgrading existing signal control equipment to provide greater traffic control. This is something which would require ongoing monitoring to identify need and a budget to cover town wide improvements of this nature is suggested	£200,000 - £350,000	This will be dependent on the roll-out of this and the number of junctions which may need to be improved / upgraded	**Medium**	**Average**	**2**
	46	Walking / Cycling	Richard Burn Way	Provide uncontrolled crossings and cycling facilities at roundabout	£35,000	Will be dependent on future linkages through Woodhall Business Park	**Low**	**Average**	**3**
	47	Walking / Cycling	Mayflower Way	Widen footway for shared use between Mayflower Way and Uplands Crescent	£12,000	Will be dependent on future linkages through Woodhall Business Park	**Low**	**Good**	**3**
	48	Traffic Management	New Lorry Park	Relocation of existing lorry park from behind Leisure Centre to new site on the northern side of town	£1,000,000	This will depend on identifying a suitable site or whether it could be delivered within the growth areas or as part of a wider development. Potential provision as part of Chilton Development	**Medium**	**Poor**	**3**
	49	Traffic Management	Cats Lane & Ingrams Well Road	Introduction of traffic calming measures to discourage rat running along Ingrams Well Road and Cats Lane caused by the lack of a northbound turning movement at Belle Vue.	£31,000 - £75,000	While interventions on Cats Lane are likely to be limited, this could facilitate provision of new footways along Ingrams Well Road, with narrower carriageways and traffic calming, to link to park and wider area connections, including to station.	**Low**	**Average**	**3**
	50	Walking / Cycling	Waldingfield Road	Widen eastern footway between Landsdown Road and Harp Close Road and convert to shared use	£100,000	An alternative option to Scheme 10 but possibly less attractive as it introduces the need for an additional crossing point and would be more costly	**Medium**	**Poor**	**4**
Localised Improvements with limited benefit to Growth Areas	51	Walking / Cycling	King St	Raised tables and uncontrolled crossings at diverge	£40,000	Allocated funding through LTP3	**High**	**Good**	**1**
	52	Walking / Cycling	Market Hill	Introduction of shared space	£460,000	Allocated funding through LTP3	**Medium**	**Good**	**2**
	53	Walking / Cycling	Northern Road	New puffin crossing	£70,000		**Low**	**Average**	**3**
	54	Walking / Cycling	Chilton Industrial Estate (a)	Upgrade existing RoW and convert to shared use route	£120,000	Feasibility question about extent of widening / cost	**Low**	**Poor**	**3**
	55	Walking / Cycling	Chilton Industrial Estate (b)	Upgrade existing RoW, widen where possible, and convert to shared use route	£29,000 - £69,000	Feasibility question about extent of widening / cost	**Low**	**Poor**	**3**
	56	Walking / Cycling	Waldingfield Road	Provide 2x new pedestrian islands	£10,000		**Low**	**Poor**	**3**
	57	Walking / Cycling	Shawlands Avenue	Mark highway with advisory cycle lanes at 6 traffic island pinchpoints	£6,000		**Low**	**Good**	**3**
	58	Walking / Cycling	Shawlands Avenue	Construct jug handle crossing facility and short section of cycle track	£60,000		**Low**	**Average**	**3**
	59	Walking / Cycling	Oxford Close to Poplar Road	Convert footway to shared use, replace barriers with bollards. Construct raised table crossing	£50,000		**Low**	**Average**	**3**
	60	Walking / Cycling	Poplar Road to Pot Kiln Road	Widen footway and convert to shared use	£21,000		**Low**	**Good**	**3**
	61	Walking / Cycling	Hartest Way	Construct two short sections of cycle track	£15,000		**Low**	**Good**	**3**
	62	Walking / Cycling	Pot Kiln Road to Minsmere Way	Convert footway to shared use. Short section of additional shared use to avoid steps	£10,000		**Low**	**Good**	**3**
	63	Walking / Cycling	Minsmere Way to Canhams Road	Convert footway to shared use, replace barriers with bollards	£8,000		**Low**	**Good**	**3**
	64	Walking / Cycling	Belle Vue Road	Widen footway and convert to shared use.	£10,000		**Low**	**Good**	**3**
	65	Walking / Cycling	Belle Vue Road / Constitution Hill	Convert RoW to shared use route	£15,000		**Low**	**Good**	**3**
	66	Walking / Cycling	Station Road	Mark out route through leisure centre car park	£10,000		**Low**	**Good**	**3**
	67	Walking / Cycling	Middleton Road	Widen existing footway connection to Valley Walk and convert to shared use	£35,000 - £84,000		**Low**	**Average**	**3**
	68	Traffic Management	Friar Street	Friar Street closed to northbound traffic between Market Hill and Station Road with improved pedestrian realm provided	£23,000 - £30,000	This would need to be balanced against potential increases in flows around Cross Street	**Low**	**Average**	**3**
	69	Walking / Cycling	BR2	Church development NW of town centre. Improve existing surface to bound surface	£15,000		**Low**	**Unknown**	**4**
	70	Walking / Cycling	Sudbury Common	Improve section of well used routes where they cross water courses	£10,000		**Low**	**Unknown**	**4**

5.3.3 Walking & Cycling Improvements

An extensive range of potential improvements have been identified to improve the existing pedestrian and cyclist provision in Sudbury. Many of these schemes look to make use of existing footpaths by increasing their width to between 2 and 3m and converting them to shared footway / cycleways with improved surfacing and lighting, providing better quality and more direct routes, while also considering improved crossing facilities and new links where this will improve legibility.

Key interventions are focussed on ensuring that there are suitable connections to the future growth areas, while also looking to provide improvements which will also encourage walking / cycling from existing areas. This includes the provision of improved facilities in and around the town centre where appropriate. A summary of the key interventions is provided below:

- Waldingfield Road – Extension of the existing off-road shared use provision to provide a route from Harp Close Road to connect to existing facilities around the A134 and Aubrey Drive roundabouts. This will connect with other proposed improvements along Church Field Road, Northern Road and Springlands Way and existing facilities on Aubrey Drive for improved access to the land at County Farm (East), Chilton Industrial Estate and Chilton mixed-use development. To the south of Harp Close Road, existing facilities provide a clear route to the town centre, while cyclists would continue on carriageway.
- Newton Road – It is considered unfeasible to provide a continuous footway on either side of Newton Road. Improvements have therefore looked to improve crossing opportunities at key locations, by the Northern Road and Cat's Lane junctions, to provide safe crossing points, creating a more legible route along Newton Road and also providing connections to other existing and improved routes to current employment and residential areas. Further shared footway / cycle way facilities should be provided to connect the East of Sudbury development with Newton Road to the west of the Northern Road junction.
- North-West Sudbury – Improvements have been identified to better connect the existing network of footpaths and quiet residential streets with some key footpaths upgraded to shared use and new links to provide improved pedestrian and cycling accessibility between the town centre, the existing residential areas and to the western sections of the Chilton development.
- Town Centre – New crossing facilities have been identified around the Belle Vue junction, while LTP3 funding has already been allocated to provide new crossings at the King Street diverge and to the introduce shared surfacing on Market Hill. These would not only help to address existing requirements, but also facilitate future access from the north and east. The bus station redevelopment would also improve permeability and access to key facilities. New cycle parking facilities should also be provided at key locations in the town centre.

5.3.4 Public Transport

Improvements to the existing bus station, such as increased capacity, enhanced information and waiting facilities, improved accessibility and a more attractive environment, will form an important role in encouraging people to leave their cars at home. The current strategy for the bus station's redevelopment is that it will come forward as part of the wider regeneration of the Hamilton Quarter area. As well as the bus station, this would be expected to provide much needed additional linkages between the town centre and the area to the south-east. The extent of transport funding towards this scheme will need to be established once further studies have been conducted to confirm the viability of the regeneration of this area.

As noted previously, while there is a reasonable level of bus route coverage within Sudbury, the frequency of provision is low. While it may not prove cost efficient to provide dedicated shuttle services to new developments to satisfy this, increased provision on existing routes to ensure that new development has at least half hourly frequent services in either direction throughout the day will be required to ensure public transport is seen as a viable alternative.

In the case of the Chilton growth area, current masterplan proposals indicate that the number 700 service, which already runs along Acton Lane through the site, is amended to provide a 20 minute frequency service throughout the day, Monday to Saturday, with a reduced service in the evenings and Sundays. The route would also be amended so that alternate services

would exit either via Acton Lane or via the Spine Road to the new access onto the A134. Further consideration will need to be given as to how this ties into the existing routes, given that two service loops are currently in operation towards Tesco / Springlands Way and the current proposals suggest that much of the development may only be accessed by 1 service every 40 minutes. Any amendments to the routing of the 700 service should be focussed on delivering high frequency and an efficient routeing to the future growth areas. Overall a 20 minute frequency connecting the future growth areas with the town centre is a reasonable and worthwhile aspiration which would provide a viable alternative to car use for local trips. Increasing frequency on the 91 and 753 bus services would improve connections between Sudbury and the major settlements in the region, Ipswich, Colchester and Bury St Edmunds, as well as providing strong public transport links for the East of Sudbury growth area. A frequency of 2-3 services per hour Monday to Saturday would represent a significant improvement and would greatly enhance connectivity to the East of Sudbury growth area.

It is suggested that bus service improvements should be subject to viability testing and whilst initial 'pump priming' should be secured to instigate favourable travel patterns at the new developments, the services will need to be self sustaining in the long term.

Improvements to the bus frequencies will also need to be coupled with the provision of suitable stopping facilities in and around the growth areas and the upgrading of any existing sub-standard stops. The provision of Real Time Public Information (RTPI), both at the bus station and at important stops on the key bus routes would be required to increase the attraction of these services.

Bus priority opportunities should be exploited as part of future growth, including where possible dedicated access or bus only routes as part of development areas.

5.3.5 Influencing Travel Behaviour (ITB)

As well as ensuring there are good sustainable transport links and parking control, it will be important that people are made aware of their options and are therefore able to make informed travel choices.

This will form a two pronged approach. Strategies which are targeted at the growth areas, in the forms of travel plans and land use planning to maximise the proportion of short distance, internal trips, will be imperative.

In addition, there should be a more general approach to promoting sustainable travel behaviour amongst the existing population. This would share many of the characteristics of the individual growth area Travel Plans and look to promote sustainable transport modes through marketing campaigns and include a dedicated section on Babergh website. Measures should include promotion of car sharing, sustainable transport maps and timetables, promotion of connections between modes (integrated transport facilities), identification of the benefits of sustainable travel and discussions with key employers to identify ways to minimise the impact of business related travel (individual and framework travel plans). This may also include a personal travel planning service targeted in areas most likely to be affected by development and related improvements. Other measures which would be covered under such a scheme include cycle proficiency training and local services / public transport financial incentives.

5.3.6 Framework Parking Strategy

Control of parking provision will also be important in encouraging sustainable behaviour. As well as ensuring that the provision of parking within new development is minimised, as part of this study a Framework Parking Strategy has been identified which sets out a strategy to minimise the availability of parking within Sudbury and discourage car trips to the town centre.

The Town Centre Health Check notes that Sudbury has significant public parking provision, principally located in a range of car parks in and around the town centre. In total there are over 1080 parking spaces in 9 car parks, the largest concentration of which is around Great Eastern Road to the south east. A plan showing where these car parks are located and the relative number of spaces are provided in Appendix E.

In terms of management and control, these car parks are identified as being either short or long stay. Short stay car parks have a limit of a 3 hour stay and long stay permitting parking for up to 24 hours, with no return within 4 hours in both cases. Babergh DC has recently resolved to permit long-stay parking of up to 72 hours.

Until October 2010, all parking was free in Sudbury, when a flat rate charge of £1.50 was introduced for vehicles parking for longer than 3 hours in two of the long stay car parks, at the Leisure Centre and Railway Station. These account for over 80% of long stay parking in the town. There continues to be no charge for parking under 3 hours at any car park, or for more than 3 hours in the other 4 long stay car parks. All vehicles would however be expected to display a ticket, regardless of anticipated stay. A limited number of season parking permits have also been made available for the Leisure Centre and Railway Station car parks, which offer discounts on the cost of parking, however it is understood that take up on these has been relatively low.

In addition to the off-street car parks, there is also restricted stay parking provided on a number of streets around the gyratory, including along Market Street, Gregory Street, North Street and East Street. These have a much shorter permitted duration, typically 1 hour, designed to have a higher turnover and cater for short-stay trips to the town centre retail / facilities. While there are double yellow lines on most of the streets in and around the town centre, restricting parking at any time, there are relaxations on this, notably in parking bays along Friar Street and some of the residential areas around the town.

The availability and cost of car parking has been identified as a benefit to the attractiveness of the town centre, while it also serves rail commuters driving to the station and, given the apparent general lack of private non-residential parking beyond supermarket customer car parks, people working within the town centre. Despite the benefits, the availability of significant levels of (mostly) free parking within the town centre will continue to act as a barrier to achieving significant mode shift and, as such, minimise the opportunity to alleviate the traffic related issues that have previously been identified.

Given the predominantly “local” nature of commuter travel within Sudbury, commuter trips in particular should be targeted to be undertaken by more sustainable modes. While parking charges have only recently been implemented and the impact of these are still being monitored, it will be important that any scheme looks to minimise the amount of long stay parking available, with car parking charges used to supplement this. It will also be necessary to identify the extent to which short term parking can also be reduced in order to discourage vehicle trips and provide increased space for enhanced public realm and pedestrian improvement schemes, while maintaining a level of parking which maintains the vitality of the town centre.

The LTAP report notes that a Best Value Study of Babergh District Council’s off-street parking service indicated that typical demand did not significantly exceed the available spaces. This study was produced in 2002 since when no quantitative study appears to have taken place. Site observations in 2011 indicated that there was parking availability with the off-street car parks around Great Eastern Road and North Street typically around 70% occupied in the mid-afternoon. Parking on Market Street was observed to account for over 80% of capacity. Further study will be required to confirm existing parking demand by duration and location in order to better understand the extent to which the level of parking can be reduced, the scope for introducing reduced duration limits on existing on-street parking to maximise the turn-over / availability of bays for short trips and the potential for a lower threshold for long stay trips.

The future introduction of parking charges for short stay parking within the car parks in the longer term may provide not only an added discouragement for driving but also help to maintain a revenue stream for the ongoing maintenance and enforcement of parking. However, charges would need to be suitably scaled to reflect their principal use for short to medium duration stays, with on-street parking being maintained for very short stay parking.

The development of a parking strategy, which will very much be seen as a “stick”, does need to form part of an integrated package of measures, with suitable carrots provided. As such the success of this in achieving modal shift, and perhaps being politically acceptable, will be dependent upon ensuring that there are alternatives to driving into Sudbury. Any reduction in parking provision, and in particular long-stay parking, should therefore be introduced along with improvements made to walking / cycling and bus connections to the town. These should be seen as complimentary measures with reduced parking availability providing the opportunity to improve the pedestrian and cyclist environment as well as potentially benefitting public transport journeys through lower peak time congestion. Given that such measures would be expected to have greatest impact on employees driving to work, it will also be important that a smarter choices programme has been developed which ensures that people are aware of the availability of alternative modes, while also working with employees to provide more options and incentives to their staff not to drive to work. It will also be important that people are made aware of any reduction in parking

availability in order to discourage them from bringing their car into Sudbury in the first place, and not to increase their journey distances / time through driving around looking for a space, with the associated congestion / pollution impacts.

Anecdotal evidence suggests that the introduction of parking charges for long stay users has resulted in an increase in the level of inappropriate / illegal parking taking place on-street in and around the town centre. Concerns have also been raised by residents not being able to park outside their houses as a result of commuters. The former issue is one of stronger enforcement that will need to be addressed in order to ensure that the triple negative impact such parking has in terms of negating modal shift, not providing anticipated revenue and narrower effective road widths leading to congestion is minimised. It is understood that Suffolk CC currently have no plans to decriminalise on-street parking and as such enforcement remains the responsibility of Suffolk Police.

The residents' parking issue is more complicated given that there are no current restrictions in place which need to be enforced and there is no "right" to a parking space. While a residents' parking scheme would address some of these issues and further minimise the opportunity for long stay vehicles to circumnavigate restrictions in the town centre, this can create its own issues with regard to the need for residents to apply for permits, the need for visitor permits and costs and issues associated with its administration and ultimate enforcement. It is suggested that the need for such a scheme, and its extents, is investigated further once the other parking measures are introduced. This should also consider the need to introduce parking restrictions along Cornard Road in the vicinity of a footpath across the railway line and on to the station, to discourage rail users from driving to and parking in this area.

An additional issue is the existing location of lorry parking behind Waitrose / the Leisure Centre to the south-west of the town centre. LTP3 notes that traffic associated with the lorry park combined with deliveries to the area leads to a high volume of commercial vehicles in this retail and car parking area. There is a proposal to relocate the lorry park to the north of the town, and while proposals for this have yet to be confirmed, it is possible that this is provided as a part of the Chilton mixed-use development. This would be expected to reduce heavy goods vehicle movements in the town centre on the basis that the industrial estate is considered the primary destination for the majority of these vehicles, although limited larger vehicle parking could be retained in the town centre, subject to demand.

One other point of note is the availability of disabled parking within the off-street car parks. In total only 3% of this car parking is dedicated for disabled users. DfT statistics for 2007 indicate that the number of blue badges issued in Suffolk equates to 48 per 1000 of the population (4.8%). While this may be partially off-set by on-street disabled parking provision in the vicinity of the high-street retail in the town centre, the extent of demand for these spaces should be reviewed as part of any study and increased if required.

Based on this, the following framework strategy has been identified for parking management in Sudbury as part of the overall strategy of maximising sustainable transport behaviour:

- Detailed parking study of demand, location and duration of on-street and off-street restricted parking
- Review of current parking enforcement in conjunction with SCC and Suffolk Police
- Confirmation of adequacy of existing disabled parking provision
- Reduction in long-stay parking provision, with charges introduced in remaining long stay car parks.
- Reduction in on-street parking provision to provide increased public realm with reduced duration of permitted parking
- Introduction of new charging strategy for off-street car parks with charging introduced for all users, with emphasis to discourage long-stay parking.
- Review of requirements for residential parking zones and parking restrictions along Cornard Road to discourage station users.
- Identification of new lorry parking site to the North of Sudbury

These elements will form part of an integrated transport strategy and while minimising the availability of long-stay parking and the associated measures to enforce this should be treated as a priority, these should only be introduced in combination with measures to improve the accessibility of the town centre by non-car modes.

5.4 Sustainable Transport Strategy Mode Shift for New Development

5.4.1 Introduction

As identified above, the proposed measures identified in the emerging Sudbury Transport Strategy will focus on achieving modal shift away from car use, particularly for shorter journeys, including those that originate and end within Sudbury. This section considers the potential for mode shift to reduce the vehicular impact of proposed levels of growth in Sudbury as identified in the Main Test Scenario. More detailed information relating to the calculations behind this analysis is provided in Appendix F.

5.4.2 Residential Mode Shift

For the potential mode shift associated with the residential development, a three step process has been followed:

1. Local Trip Mode Shift associated with Measures - The 2001 Census data suggests that just over 43% of car driver journeys to work from the Sudbury North ward and 53% from the Great Cornard North ward will remain within the town. This has been used as a proxy for all external residential trips, with the exception of education, from the Chilton and East of Sudbury developments respectively. As set out previously, there is the potential for reducing these local car driver trips by up to 26% given appropriate infrastructure improvements and this has been applied to the relevant proportion of local trips for each growth area. While the reduction in car trips for work, shopping and other purposes has been factored by the proportion of trips internal to Sudbury (as identified in journey to work data), it is assumed that the vast majority of education trips will be maintained within Sudbury and as such, the reduction has been applied to all education car trips.
2. Wider Area Mode Shift associated with Bus Improvements - In addition to local journeys, the improvement in inter-urban bus services, in the form of the increased frequencies, RTPI and an improved interchange facility with the new bus station, would be expected to lead to mode shift from car driver to bus modes for some trips extending beyond Sudbury. The two bus services which are most likely to be improved along these lines are the 753 between Colchester and Bury St Edmunds and the 91 between Sudbury and Ipswich.

   To identify the number of journeys which could be affected, wards with major settlements on these routes have been identified and the proportion of car driver trips to these wards from Sudbury North and Great Cornard North as a proportion of all car driver journeys has been taken from 2001 Census journey to work data. This indicates that about 20% of car driver work journeys could be affected by these proposals. For the purposes of this analysis, it has been assumed that these improvements will lead to at least 10% of car driver trips along these routes for all journey purposes transferring to bus use.
3. Influencing Travel Behaviour - It is also anticipated that the introduction of ITB schemes will lead to additional mode shift, beyond that identified above relating to the infrastructural improvements. This will focus on encouraging more sustainable travel patterns by ensuring people are fully aware of their travel options, providing relevant information relating to alternative modes of travel and providing suitable incentives where appropriate. DfT's 'Smarter Choices – Changing the way we travel' report states that "Personalised travel planning (PTP) initiatives typically report reductions in car use of 7% to 15% in urban areas and 2% to 6% in rural or smaller urban areas." It is anticipated that PTP will form part of a wider range of Travel Planning initiatives on the site. It is considered that PTP will compliment the other measures that have been identified and help to maximise their impact. Given the potential for the double counting of mode shift, a conservative 6% reduction in external car trips generated by the development has been assumed.

Table 5.5 below sets out the adjusted vehicular trip generation associated with the mode shift assumptions identified. This identifies the potential for a reduction of some 182 AM peak vehicular trips and 158 PM peak vehicular trips as a result of the strategy.

Table 5.5 – Residential Development Trip Generation – Mode Shift Impact (Car Driver)

Scenario	Development	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Pre-Mode Shift	Chilton Mixed-Use Site	107	347	454	316	217	533
	East of Sudbury	72	234	306	167	115	282
	Total	***179***	***581***	***760***	***483***	***332***	***815***
Post-Mode Shift	Chilton Mixed-Use Site	83	268	351	257	177	434
	East of Sudbury	54	173	227	132	91	223
	Total	***137***	***441***	***578***	***389***	***268***	***657***
Difference (Absolute)	Chilton Mixed-Use Site	-24	-79	-103	-59	-40	-99
	East of Sudbury	-18	-61	-79	-35	-24	-59
	Total	***-42***	***-140***	***-182***	***-94***	***-64***	***-158***

5.4.3 Employment Mode Shift

A similar approach has been taken to identify the potential mode shift associated with the employment land uses.

1. Local Trip Mode Shift associated with Measures - The 2001 Census data suggests that a little under 43% of car driver journeys to work to the Sudbury North ward and 41.4% to the Sudbury East ward will originate within the town. This has been used as a proxy for all external employment trips to the Chilton and County Farm (East) developments respectively. Again, these proportions of car vehicle trips from each area have been reduced by 26% to reflect the potential mode shift associated given appropriate infrastructure improvements.
2. Wider Area Mode Shift associated with Bus Improvements – The 2001 Census data identifies that between 17% and 18% of vehicle trips to the Sudbury North and Sudbury East wards originate from wards served by either the 753 or 91 and an allowance for a 10% mode shift from car driver to bus has been made for these trips.
3. Influencing Travel Behaviour - Workplace Travel Plans will be expected to be implemented by employers on the development. DfT's Smarter Choices report notes that "Workplace Travel Plans typically reduce car driving by between 10% and 30%, though the best ones achieve significantly more than that." Given that an allowance has already been made for mode shift related to infrastructural improvements, a conservative 10% reduction in employment car driver trips at each of the employment growth areas has been applied to reflect workplace travel planning.

Table 5.6 below sets out the adjusted vehicular trip generation associated with the mode shift assumptions identified. This identifies the potential for a reduction of some 175 AM peak vehicular trips and 145 PM peak vehicular trips as a result of the strategy.

Table 5.6 – Employment Development Trip Generation – Mode Shift Impact (Car Driver)

Scenario	Development	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Pre-Mode Shift	Chilton Mixed-Use Site	626	111	737	81	502	583
	County Farm (East)	100	32	132	52	85	137
	Total	***726***	***143***	***869***	***133***	***587***	***720***
Post-Mode Shift	Chilton Mixed-Use Site	500	89	589	65	401	466
	County Farm (East)	79	25	104	41	67	108
	Total	***579***	***114***	***693***	***106***	***468***	***574***
Difference (Absolute)	Chilton Mixed-Use Site	-126	-22	-148	-16	-101	-117
	County Farm (East)	-21	-7	-28	-11	-18	-29
	Total	***-147***	***-29***	***-176***	***-27***	***-119***	***-146***

5.4.4 Overall Impact

It has been identified that there is significant potential for mode shift within Sudbury which can be realised through the introduction of a suitable sustainable transport strategy. Table 5.7 below considers the absolute change in the level of vehicle car trips across the growth areas. This indicates a net reduction of 358 vehicular trips in the AM peak and 304 car trips in the PM peak. This represents a reduction of about 20% in the overall level of car driver trips as a result of the measures identified in the strategy. The traffic flow and link impact figures incorporating this mode shift are provided as Figures 5.2 – 5.7. While there would still be significant increases in the level of flows compared to the existing situation, there is a marked reduction in the level of traffic flows when compared to the trip generation without the transport strategy, with typically reductions of 80 – 100 vehicles post mode shift along the A134, up to 50 less vehicles on the B1115 Waldingfield Road / East Street Corridor near the gyratory and reductions of approximately 170 and 160 vehicles on the B1115 Waldingfield Road between the roundabouts.

Table 5.7 – Combined Growth Trip Generation – Mode Shift Impact (Car Driver)

Scenario	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Pre-mode shift	905	724	1629	616	919	1535
Post-mode shift	716	555	1271	495	736	1231
Net Impact (absolute)	-189	-169	-358	-121	-183	-304
Net Impact (%)	-21%	-23%	-22%	-20%	-20%	-20%

However, as indicated previously, integrated land use planning, ensuring a suitable mix of complimentary land uses and the provision of supporting services and facilities will also be an important part of minimising the impact of future growth in Sudbury. Table 5.8 provides a comparison of the overall trip generation associated with the projected levels of growth for Sudbury in the event that they came forward as independent sites without complimentary facilities, and therefore with no allowance for the local containment of trips. The table identifies that by combining an integrated approach to land use planning and the sustainable transport strategy, reductions of about 30% in the level of car driver trips can be achieved.

Table 5.8 – Combined Growth Trip Generation – Local Containment and Mode Shift Impact (Car Driver)

Scenario	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Base Trip Generation	961	905	1866	700	976	1676
Post-mode shift and local containment	716	555	1271	495	735	1231
Net Impact (absolute)	-245	-350	-595	-205	-240	-445
Net Impact (%)	-25%	-39%	-32%	-29%	-25%	-27%

These figures reflect the reduction in the car driver trip generation associated with the growth areas by pursuing policies of integrated land use planning and implementing a sustainable transport strategy. It should be reiterated however that the improvements of the sustainable infrastructure in Sudbury, as well as introduction of ITB measures and parking strategies, while being fundamental to helping deliver future growth in the town, would also be expected to lead to mode shift in existing movements by helping to address existing issues and encouraging people to change their travel behaviour. In doing so, these measures would be expected to further mitigate the impacts of growth on the town and help to alleviate existing transport issues.

5.4.5 Traffic Management

When you consider the analysis of the effects of the sustainable strategy on development area trips it is clear that there remains a considerable residual traffic impact. Whilst the proposed strategy would be expected to have an impact on reducing existing levels of traffic demand in Sudbury, the fact remains that there will be an element of traffic growth, which as illustrated will be very significant at certain locations. A number of traffic control measures have been identified to minimise the level or impact of car use. As well as an ongoing study into measures to improve air quality in the area around Cross Street, possible measures include:

- Ingram's Well Road to discourage rat running , implement traffic calming by reducing the carriageway width to provide a new footpath to serve pedestrian desire lines and improve accessibility to the park;
- Where possible provide signalised access control to new development areas to facilitate traffic control and provision of quality pedestrian facilities;
- Consider provision of a separate access to the Chilton mixed-use development area to the A134 to dilute traffic impacts, specifically on the Waldingfield Road;
- Traffic calming and management along the A134: this would be associated with the possible future signalisation of junctions as part of the Chilton growth area;
- Focussed capacity improvements potentially at Newton Road / Northern Road, A134 / Waldingfield Road and Waldingfield Road / Aubrey Drive / Church Field Road junctions. The reasoning behind these capacity improvements would not be to facilitate easy car access to the development areas, but rather prevent severe capacity issues affecting emergency access, commercial traffic or impinging bus movement. Proposals should be focussed on delivering increased capacity on the basis of need and should avoid provision of excess capacity for early stages of development.
- Consider signalisation of further town centre junctions and upgrading existing signal control equipment to provide greater traffic control. This is something which would require ongoing monitoring to identify need and a budget to cover town wide improvements of this nature is suggested;

5.5 Funding and Implementation

As part of the outline costing exercise, measures supporting future development areas are identified and all measures are allocated a level of priority such that the strategy can be implemented in a focussed manner as funding comes forward.

As identified previously, there is likely to only be limited funding for these schemes through the LTP3 process. The LTP3 identifies an indicative capital funding allocation of £450,000 for Sudbury the period 2011 – 2015. On the basis that a constant level of funding is provided throughout the LTP3 period (up to 2031), this would equate to some £2,250,000 available for transport improvements in the town. It is however understood that funding of £500,000 has already been allocated to two schemes, Market Hill shared space and King Street crossings, and to reflect this, it is assumed that total funding of up to £2,300,000 may be available up to 2031.

The indicative costs associated with the transport measures identified in the strategy total between approximately £8.5million and £9.8million, with the only scheme that has identified funding other than through LTP3 at this point in time being a pair of puffin crossings on Girling Street (Scheme 11) on approach to Belle Vue, at a cost of £150,000. These are understood to be funded as part of the S106 contribution from a supermarket development on Cornard Road, which may also fund the improvements to the footpath between Cornard Road and Newton Road (Scheme 13). These will address an important gap in pedestrian connectivity in this area and, subject to the agreement of the S106, would be expected to be delivered in the shorter-term.

As such, the LTP3 funding will only be able to provide a limited proportion of the funding required to develop the measures identified – with the confirmed S106 contributions and the full potential LTP3 funding this still suggests a potential funding shortfall of £7.5million – and it is clear that delivery of much of the strategy will need to come from developer contributions and the CIL process. The vast majority of the schemes that have been identified are considered to help to support the growth areas proposed for Sudbury, and as such should be eligible for funding through these sources. This is reflected in Table 5.9 below which sets out the indicative costs by priority and relevance to the growth areas.

Table 5.9 – Indicative Costs by Priority

Priority	Schemes supporting Sudbury Growth Areas	Localised Improvements	Total
1	£3,389,000 - £3,984,000	£40,000	£3,429,000 - £4,024,000
2	£2,947,500 - £3,473,500	£460,000	£3,407,500 - £3,933,500
3	£1,078,000 - £1,122,000	£492,000 - £588,000	£1,570,000 - £1,710,000
4	£100,000	£25,000	£125,000
Total	£7,514,500 - £8,679,500	£1,017,000 - £1,113,000	£8,531,500 - £9,792,500

It will therefore be important to ensure that suitable contributions and funding mechanisms are sought to deliver measures which will enhance the accessibility of the different growth areas, both in the immediate vicinity of the sites and in the form of wider area connections. This will need to be done in connection with ensuring that suitable on-site measures (constrained car parking, foot / cycle paths, cycle facilities, Travel Plans) are also put in place.

Much will also depend on the approaches taken to the future redevelopment of the bus station and lorry park and whether suitable development partners are identified which will help to deliver these aspirations with the requirements for minimal additional external funding.

The phasing and implementation of growth will be very important. The Core Strategy identifies that the remaining LDF housing allocation could come forward in the mid to late part of the plan period. As well as the importance of a suitable phasing programme, particularly with regard to development at Chilton, to maximise the benefits of mixed use development, it will be important that key infrastructure is delivered at an early stage. Transport behaviour will be harder to change once established and as such it will be necessary to ensure that adequate measures are put in place prior to the completion of the first phases of

development, including infrastructural and ITB initiatives, to promote sustainable travel. Proposals such as improvements to bus services should also be tied in to the growth of these developments to ensure they are available at an early stage and improved as necessary as development continues.

5.6 Summary

There are a number of existing transport issues within Sudbury which are likely to be exacerbated by the proposed levels of growth identified in the town. A preliminary review has indicated that there are no clearly beneficial options for significantly altering the operation of the town centre gyratory while the Western Bypass, which is considered likely to only have a minor mitigating effect on the future growth, is not considered deliverable in the short to medium term.

In light of these constraints, the current relatively high car mode shares and the low trip duration in Sudbury, it is proposed that a series of measures are introduced which are designed to encourage sustainable transport behaviour, including improvements to the pedestrian and cycling networks to ensure strong connections to the new growth areas, improved bus station and services, a framework parking strategy and information / marketing strategies.

As part of the range of measures identified are a number that could be considered development specific. These include the internal layout / footpaths / cycleways within new development, access junctions, cycle / car parking and development travel plans. These are all items which would be expected to come forward as part of more detailed proposals associated with the development and as such provided directly by the developer. Similarly, it is expected that a Transport Assessment will need to be conducted in support of any future planning applications for development sites.

The future delivery of these schemes will be dependent upon funding availability. It is anticipated that a significant number of these schemes could be eligible for CIL funding, given their potential scope to both alleviate existing issues and mitigate the impact of the future development areas on the transport networks. Much will depend upon the future phasing of development to ascertain the time lines, and availability of CIL funding, for some of these measures. Given current funding levels, it is not anticipated that LTP3 funding will be sufficient to help to deliver the majority of the proposals, with an overall potential funding shortfall of £7.5million.

It is anticipated that the introduction of these measures will mean that car modes shifts of between 14 – 26% could be achieved on existing movements, in part mitigating some of the additional vehicular growth identified as a result of the growth proposals. Analysis of the projected growth levels for the area indicate that given these improvements, integrated land use planning and the promotion of mixed-use sites, the level of car trips generated by the development areas could be up to 30% lower than would otherwise be the case.

6 Summary & Conclusions

6 Summary & Conclusions

6.1 Summary

AECOM have been commissioned by Babergh District Council and Suffolk County Council to review the transport issues associated with planned residential and employment growth within Sudbury and the anticipated infrastructure requirements associated with such development.

The key issues identified in the report are as follows:

- Sudbury has a number of historic transport issues, primarily related to the operation of the town centre gyratory, pedestrian / cyclist permeability and pollution associated with this in the Cross Street Area. These issues are seen to affect traffic flow, pedestrian and cyclist movements into and out of the town centre and movements on key corridors within Sudbury.
- The provision of a Western Bypass had been identified to help to alleviate these issues, along with a comprehensive traffic management and walking / cycling infrastructure improvements. A bid for central funding for the bypass was rejected in 2003 on environmental grounds, and it is unlikely funding for this scheme will be available in the short to medium term. A high level review of potential improvements to the gyratory to introduce two-way working also suggests significant operational constraints.
- A high level review of the potential implications of the projected levels of growth in Sudbury has been undertaken. This has been broadly based on the levels of development identified in the Core Strategy Submission Draft, taking into account the LDF housing allocations, the Chilton mixed-use development and commercial development at County Farm (East). In total, it is anticipated that these developments would deliver some 1,550 dwellings and approximately 115,000sqm of employment floor area.
- After allowing for the “containment” of some trips given the development of mixed-use sites with complimentary facilities and land uses, the total growth levels would still be expected to result in an additional 1,535 – 1,630 vehicle trips on the highway network in the peak periods. This would result in significant increases in traffic flows on the B1115 and A134 corridors to the north of Sudbury, as well as increase pressure on the East Street / Girling Street, Belle Vue, Newton Road / Northern Road, A134 / Waldingfield Road and Waldingfield Road / Aubrey Drive / Church Field Road junctions.
- A review of local transport patterns indicates that Sudbury is largely self-contained, with a relatively high proportion of trips (40%) involving distances of less than 2km. Despite this, a significant number of people still drive to work. Given the relative proximity of much of the town, the mix of employment, retail and residential uses and the potential for ensuring proximity to bus services, there is significant scope for modal shift from private car to more sustainable forms of travel, with the potential to achieve a reduction of some 14% - 26% in local car trips.
- Given these travel patterns and the short / medium term limitations in delivering significant transport infrastructure projects which could help to at least partially alleviate existing traffic issues within the town, the study has focussed on identifying a range of transport measures which could help to promote sustainable travel behaviour, both in terms of existing movements and those resulting from the proposed growth in the region.
- Building upon work undertaken as part of the LTP3 process, a schedule and associated plan of measures has been developed, designed to instigate this mode shift. Key interventions are focussed on ensuring that there are suitable connections to the future growth areas, while also looking to provide improvements which will also encourage walking / cycling from existing areas. This includes the provision of improved facilities in and around the town centre where appropriate. It is also proposed that significant improvements are made to bus services, with better facilities and frequencies to key destinations both within Sudbury and to other major settlements. This would be in addition to the provision of a new bus station which has previously been identified as part of the development of the Hamilton Road Quarter. It will also be important that Influencing Transport Behaviour initiatives are introduced, including travel planning measures, which are designed to ensure people are aware of their travel choices and the impacts associated with them. A framework parking strategy has been identified which would look to minimise the provision of parking without being

detrimental to the health of the town centre. There should also be an integrated approach to land use planning to ensure that there are sufficient local facilities to serve these growth areas and thus minimise the number and duration of trips.

- Analysis of the potential impacts of the Sustainable Transport Strategy indicate that the introduction of the measures outlined could result in a reduction in the level of car trips associated with the growth areas of approximately 20%. When taking into account the impact of local containment, this reduction is in the region of 30% when compared to stand alone developments.
- Whilst the proposed strategy would be expected to have an impact on reducing existing levels of traffic demand in Sudbury, the fact remains that there will be an element of traffic growth, which as illustrated will be very significant at certain locations. A number of traffic control measures have been identified to minimise the level or impact of car use, while it is anticipated that there will be a need for focussed capacity improvements at key junctions to prevent severe capacity issues affecting emergency access, commercial traffic or impinging bus movement. Further consideration should also be given to the signalisation of further town centre junctions and upgrade of existing signals equipment to provide greater traffic control.
- An initial exercise has indicated that total funding of between £8.5million and £9.8million may be required to deliver all the measures identified. Given the existing level of LTP3 funding and the lack of committed infrastructural improvements, it is anticipated that the delivery of these measures will be dependent upon developer contributions, with a potential funding shortfall of £7.5million. Suitable contributions and funding mechanisms will be required to deliver measures which will enhance the accessibility of the different growth areas, both in the immediate vicinity of the sites and in the form of wider area connections. The level of contributions will be dependent on the approaches taken to the future redevelopment of the bus station and lorry park.
- The phasing and implementation of growth will be important for a number of reasons including ensuring necessary funding can be secured to deliver improvements early enough in the growth period to maximise the impact on mode shift and to ensure that a suitable mix of development, with complimentary local facilities is delivered which will allow for the “containment” of trips within the growth areas and minimise the impact on the local highway network.
- The improvements to the sustainable infrastructure in Sudbury, as well as introduction of ITB measures and parking strategies would also be expected to lead to mode shift in existing movements by helping to address existing issues and encouraging people to change their travel behaviour. In doing so, these measures would be expected to further mitigate the impacts of growth on the town and help to alleviate existing transport issues.

6.2 Key Issues and Way Forward

This report has considered the potential implications of the identified growth levels for Sudbury up to 2031 and identified a package of measures which would help to minimise the impact of this growth on the local transport networks. As further information becomes available relating to the growth areas in terms of content and timing of the development, it will be necessary to consider in more detail the phasing of these developments against the funding and delivery of the measures. It will also be important to ensure that the development of these areas is phased in such a way to ensure the provision of the required social infrastructure and complimentary land uses to minimise the need to travel beyond these sites.

All significant development will be expected to be supported by a relevant Transport Assessment and Travel Plan, which will need to reflect the overall strategy for growth in Sudbury while providing the necessary detail to identify any other potential areas for mitigation including access and junction improvements. Development that does come forward will need to consider not just off-site measures to improve accessibility but ensure that suitable provisions are made in the design of the site to encourage sustainable modes of transport.

LTP3 funding will only go so far in the delivery of the strategy and there will be an expectation that developer contributions will make up this shortfall. It is however likely that there will be a wide range of infrastructure needs associated with the growth areas and given the potentially limited quantum of residential and commercial development being brought forward under the CIL

arrangements, and the CIL requirement to ensure 'economic viability' for the developer, the sums available for transport improvements could be limited. As well as looking to develop the measures further to provide improved detail regarding the feasibility and cost of measures it will therefore be important that available money is targeted where its benefits will be maximised, ensuring strong sustainable access to the growth areas while also looking to benefit existing movements. To aid the delivery of the proposed Transport Strategy in a focussed manner which optimises the availability of funds and development opportunities, it is recommended that SCC take a review of the proposed strategy identifying the measures which are attributable in full to the specific development areas, and most suitable for delivery through the planning process. The remaining measures which require use of pooled funds then need to be identified and the remaining schemes it can be assumed would require public funds for delivery. This exercise would feed into further prioritisation of the strategy components.

Appendix A – Sudbury Travel Behaviour

Appendix A - Existing Sudbury Travel Patterns

Table 1: Distance Travelled to Work

Distance	% of Total Trips		
	Sudbury	Ipswich	England
Less than 2km	41%	29%	20%
2km to less than 5km	12%	32%	20%
5km to less than 10km	6%	10%	18%
10km to less than 20km	9%	8%	15%
20km to less than 30km	10%	3%	5%
30km to less than 40km	3%	1%	2%
40km to less than 60km	2%	1%	2%
60km and over	3%	4%	3%
Other	14%	11%	14%

Table 2: Mode of Travel to Work

Distance	% of Total Trips		
	Sudbury	Ipswich	England
Work mainly at or from home	8%	7%	9%
Underground, metro, light rail, tram	0%	0%	3%
Train	1%	2%	4%
Bus, minibus, coach	3%	10%	8%
Motor cycle, scooter or moped	1%	2%	1%
Driving a car or van	57%	52%	55%
Passenger in a car or van	8%	7%	6%
Taxi or minicab	1%	0%	1%
Bicycle	4%	6%	3%
On foot	17%	14%	10%
Other	0%	0%	0%

Source: 2001 Census Journey to Work Data

Appendix B – Sudbury Public Transport Timetables

7

Suffolk County Council

SUDBURY
& SURROUNDING AREA
INCLUDING SERVICES: 5, 11, 12, 13, 84, 90, 91, 112, 236, 753, S1 & X16
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April 2011

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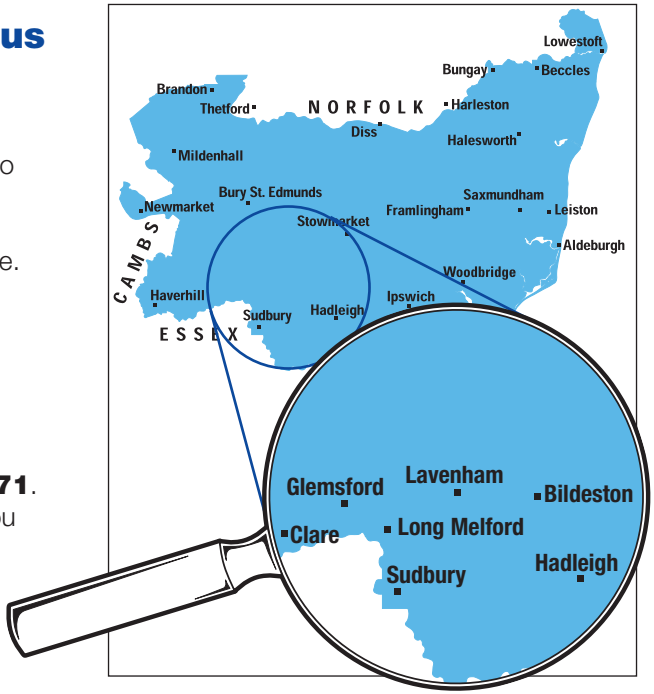


Operator code and contact information

Operator	Contact
ABC Cab Co (ABC)	01440 712712
Beestons (BE)	01473 823243
Carters Coach Services (CC)	01473 313188
H C Chambers (CH)	01787 227233
De Vere Travel (DEVE)	01787 462256
Felix Taxis (FX)	01787 310574
Hedingham & District Omnibuses (HD)	01787 460621
Mulleys Motorways (MU)	01359 230234
Regal Busways (REG)	01245 249001

KEY

⇄	Near Rail Station
🚌	Bus station/interchange
1	Sponsored by Suffolk County Council
3	Sponsored by Essex County Council
Sch	Schooldays only
NSch	Not Schooldays
S	Saturdays
Col	College days only
S&H	Saturdays, Monday - Friday during School Holidays
NS	Not Saturdays
Th	Thursdays
TTh	Tuesdays & Thursdays
ThS	Thursdays & Saturdays
L	Limited Stop, stops only at scheduled points
R	Stops by request only
C	Extends to Aldham, Elmsett & Whatfield
UCS	Extends to University College Suffolk (When open)
WFS	Wednesday, Friday & Saturday only

Thomas Gainsborough Statue, Sudbury

Ashen - Great Yeldham - Sudbury 1

Thursday only — from 3st August 2006

Operator	HD	HD
Service	1	1
Notes	Th	Th
Ashen, Village Hall	0940	**Sudbury,** Bus Station	1240
Ridgewell, Memorial	0945	**Foxearth,** School	1250
Great Yeldham, Oak	0950	**Pentlow,** Forge	1300
Tilbury Juxta Clare	0955	**Belchamp St.Paul,** Green	1310
Little Yeldham, Mashey Wood	0957	**Little Yeldham,** Mashey Wood	1313
Belchamp St.Paul, Green	1000	**Tilbury Juxta Clare**	1315
Pentlow, Forge	1010	**Great Yeldham,** Oak	1320
Foxearth, School	1020	**Ridgewell,** Memorial	1325
Sudbury, Bus Station	1030	**Ashen,** Village Hall	1330

Sible Hedingham - Bulmer - Sudbury 5

Thursday only — from 1st September 2005

Operator	HD	HD
Service	5	5
Notes	3	3
Sible Hedingham, Swan	0903	**Sudbury,** Bus Station	1145
Sible Hedingham, Sugar Loaves	0905	**Ballingdon,** Cross Roads	1148
Castle Hedingham, Memories	0908	**Bulmer Tye,** The Fox	1152
Castle Hedingham, Till Smiths Garage	0911	**Bulmer,** The Cedars	1155
Gestingthorpe, Foundry Corner	0921	**Belchamp Walter,** Cross Roads	1205
Belchamp Walter, Cross Roads	0925	**Gestingthorpe,** Foundry Corner	1210
Bulmer, The Cedars	0935	**Castle Hedingham,** Till Smiths Garage	1218
Bulmer Tye, The Fox	0937	**Castle Hedingham,** Memories	1221
Ballingdon, Cross Roads	0941	**Sible Hedingham,** Sugar Loaves	1224
Sudbury, Bus Station	0944	**Sible Hedingham,** Swan	1226

Sudbury Town Service — S1 (700)

Monday to Friday — from 11th August 2006

Operator	FX	FX	FX	FX
Service	700	700	700	700
Sudbury, Bus Station	0800	1000	1400	1600
Sudbury, Springlands Way	0806	1006	1406	1606
Sudbury, Springlands, Talbot Road	0810	1010	1410	1610
Sudbury, Springlands, Richard Burn Way	0812	1012	1412	1612
Sudbury, Springlands, Tesco Superstore	0814	1014	1414	1614
Sudbury, Springlands, Grenville Road	0816	1016	1416	1616
Newmans Green	0819	1019	1419	1619
Acton, The Crown PH	0821	1021	1421	1621
Acton, Vicarage Lane	0823	1023	1423	1623
Newmans Green	0825	1025	1425	1625
Sudbury, Springlands, Grenville Road	0828	1028	1428	1628
Sudbury, Springlands, Tesco Superstore	0830	1030	1430	1630
Sudbury, Springlands, Richard Burn Way	0832	1032	1432	1632
Sudbury, Springlands, Talbot Road	0834	1034	1434	1634
Sudbury, Springlands Way	0838	1038	1438	1638
Sudbury, Bus Station	0844	1044	1444	1644

Sudbury Town Service — S1 (700)

Monday to Friday — from 11th August 2006

Operator	FX	FX	FX	FX	FX
Service	700	700	700	700	700
Sudbury, Bus Station	0900	1100	1300	1500	1700
Sudbury, Springlands, Tesco Superstore	0906	1106	1306	1506	1706
Sudbury, Springlands, Grenville Road	0909	1109	1309	1509	1709
Sudbury, Springlands Roundabout	0911	1111	1311	1511	1711
Sudbury, Northen Road/Newton Road	0913	1113	1313	1513	1713
Sudbury, Cats Lane	0917	1117	1317	1517	1717
Sudbury, Bus Station	0920	1120	1320	1520	1720
Sudbury, Bus Station	0925	1125	1325	1525	
Ballingdon, Meadow View Road	0930	1130	1330	1530	
Ballingdon, Post Office	0937	1137	1337	1537	
Sudbury, Gregory Street	0940	1140	1340	1540	
Sudbury, Melford Road	0942	1142	1342	1542	
Sudbury, Priory Road	0944	1144	1344	1544	
Sudbury, Woodhall Stores	0945	1145	1345	1545	
Sudbury, York Road	0947	1147	1347	1547	
Sudbury, Bus Station	0952	1152	1352	1552	

Sudbury - Great Cornard - Sudbury — 5

Mondays to Saturdays (Except Public Holidays) — From 1st April 2011

Operator	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE
Service	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Notes																	S&H	Sch			
Sudbury, Bus Station	0810	0840	0910	0940	1010	1040	1110	1140	1210	1240	1310	1340	1410	1440	1510	1540	1540	1610	1640	1710	1740
Great Cornard, Head Lane, opp Rugby Road	0815	0845	0915	0945	1015	1045	1115	1145	1215	1245	1315	1345	1415	1445	1515	1545	1545	1615	1645	1715	1745
Great Cornard, Carsons Drive, Chaplin Walk	0818	0848	0918	0948	1018	1048	1118	1148	1218	1248	1318	1348	1418	1448	1518	1548	1548	1618	1648	1718	1748
Great Cornard, Shawlands Ave, Minsmere Way	0822	0852	0922	0952	1022	1052	1122	1152	1222	1252	1322	1352	1422	1452	1522	1552	1552	1622	1652	1722	1752
Great Cornard, Poplar Road, Lindsey Avenue	0825	0855	0925	0955	1025	1055	1125	1155	1225	1255	1325	1355	1425	1455	1525	1555	1555	1625	1655	1725	1755
Great Cornard, Head Lane, Upper School	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	|	1557	|	|	|	|
Great Cornard, Stannard Way, Glenside	0827	0857	0927	0957	1027	1057	1127	1157	1227	1257	1327	1357	1427	1457	1527	1557	1600	1627	1657	1727	1757
Sudbury, Bus Station	0830	0900	0930	1000	1030	1100	1130	1200	1230	1300	1330	1400	1430	1500	1530	1600	1605	1630	1700	1730	1800

Sudbury - Halstead

11/12/13

Mondays to Saturdays (Except Bank Holidays)

From: 29th August 2010

Operator	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG
Service	11	13	12	11	13	12	11	13	12	11	11	13	11
Notes	3	3	3	3	3	3	3	3	3	3	3	3	3
Sudbury, Bus Station, Stand A	0655	0755	0855	0955	1055	1155	1255	1355	1455	1555	1655	1755	1855
Ballingdon, Ballingdon Street, opp Strawberry Stores	0658	0758	0858	0958	1058	1158	1258	1358	1458	1558	1658	1758	1858
Bulmer Tye, Park Lane	0702	0802	0902	1002	1102	1202	1302	1402	1502	1602	1702	1802	1902
Bulmer, Cross Roads	0706	0806	0906	1006	1106	1206	1306	1406	1506	1606	1706	1806	1906
Gestingthorpe, Foundry Corner	0712	0812	0912	1012	1112	1212	1312	1412	1512	1612	1712	1812	1912
Wickham St Paul, The Victory	0718	0818	0918	1018	1118	1218	1318	1418	1518	1618	1718	1818	1918
Pebmarsh, Maplestead Road, Adj	|	0827	|	|	1127	|	|	1427	|	|	|	1827	|
Pebmarsh, War Memorial	|	0828	|	|	1128	|	|	1428	|	|	|	1828	|
Little Maplestead, Cock PH	0722	0834	0922	1022	1134	1222	1322	1434	1522	1622	1722	1834	1922
Great Maplestead, Church	|	|	0928	|	|	1228	|	|	1528	|	|	|	|
Little Maplestead, Pump	0725	0837	0934	1025	1137	1234	1325	1437	1534	1625	1725	1837	1925
Halstead, High Street	0730	0842	0939	1030	1142	1239	1330	1442	1539	1630	1730	1842	1930
Gosfield Lake, Mobile Home Park	|	|	|	1040	|	|	1340	|	|	1640	....	....	....
Halstead, Butler Road Car Park	0732	0844	0941	....	1144	1241	....	1444	1541	....	....	....	....

Halstead - Sudbury

11/12/13

Mondays to Saturdays (Except Bank Holidays)

From: 29th August 2010

Operator	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG	REG
Service	13	12	13	11	12	13	11	12	13	11	13	11	11
Notes	3	3	3	3	3	3	3	3	3	3	3	3	3
Gosfield Lake, Mobile Home Park	....	....	....	1048	....	....	1348	....	....	1648	....	|	|
Halstead, Butler Road Car Park	0734	0847	0944	|	1147	1244	|	1447	1544	|	....	|	|
Halstead, High Street	0736	0849	0946	1058	1149	1246	1358	1449	1546	1658	1746	1858	1937
Little Maplestead, Pump	0741	0854	0951	1103	1154	1251	1403	1454	1551	1703	1751	1903	1942
Great Maplestead, Church	|	0900	|	|	1200	|	|	1500	|	|	|	|	|
Little Maplestead, Water Tower, o/s	0744	0906	0954	1106	1206	1254	1406	1506	1554	1706	1754	1906	1945
Pebmarsh, War Memorial	0750	|	1000	|	|	1300	|	|	1600	|	1800	|	|
Pebmarsh, Maplestead Road, Adj	0751	|	1001	|	|	1301	|	|	1601	|	1801	|	|
Wickham St Paul, The Victory	0800	0910	1010	1110	1210	1310	1410	1510	1610	1710	1810	1910	1949
Gestingthorpe, Foundry Corner	0806	0916	1016	1116	1216	1316	1416	1516	1616	1716	1816	1916	1955
Bulmer, Cross Roads	0812	0922	1022	1122	1222	1322	1422	1522	1622	1722	1822	1922	2001
Bulmer Tye, Park Lane	0816	0926	1026	1126	1226	1326	1426	1526	1626	1726	1826	1926	2004
Ballingdon, Ballingdon Street, opp Strawberry Stores	0820	0930	1030	1130	1230	1330	1430	1530	1630	1730	1830	1930	2008
Sudbury, Bus Station, Stand A	0835	0935	1035	1135	1235	1335	1435	1535	1635	1735	1835	1935	2013

Colchester - Nayland - Sudbury

Mondays to Saturdays (Except Public Holidays)

From: 1st January 2011

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	84	84	84	84	84	84	84	84	84	84	84	84	84	84
Notes	Sch	H	Sch							S&H	Sch	S&H	Sch	
Lexden, Norman Way Schools	....	....	....	....	....	....	....	....	....	....	....	....	1545	....
Colchester, Bus Station	0745	0755	0800	0845	0945	1045	1145	1245	1345	1510	1510	1610	1610	1735
Colchester, Head Street	0748	0758	0803	0848	0948	1048	1148	1248	1348	1513	1513	1613	1613	1738
Colchester, St Helena School											1520			
Colchester, North Station Layby	0755	0803	0810	0855	0955	1055	1155	1255	1355	1520	1530	1620	1620	1745
Mile End, Church		0808												
Colchester General Hospital, Turner Road	0758		0813	0858	0958	1058	1158	1258	1358	1523	1533	1623	1623	1748
Horkesley Heath, Half Butt	0804	0812	0819	0904	1004	1104	1204	1304	1404	1529	1539	1629	1629	1754
Great Horkesley, Post Office	0807	0814	0821	0907	1007	1107	1207	1307	1407	1532	1542	1632	1632	1757
Nayland, Bear Street, opp Doctors Surgery			0826											
Leavenheath, High Road, opp Elm Tree Lane			0832											
Leavenheath, High Road, Shelter			0834											
Leavenheath, Old Road, opp Hare and Hounds			0835											
Nayland, Bear Street, Doctors Surgery	0811	0819		0911	1011	1111	1211	1311	1411	1536	1546	1636	1636	1801
Nayland, Birch Street, opp Mill Street	0812	0820		0912	1012	1112	1212	1312	1412	1537	1547	1637	1637	1802
Stoke by Nayland, Church St, opp Village Hall	0816	0824		0916	1016	1116	1216	1316	1416	1541	1551	1641	1641	1806
Stoke by Nayland, Sudbury Road, The Blundens	0818	0826		0918	1018	1118	1218	1318	1418	1543	1553	1643	1643	1808
Stoke by Nayland, On Site, Middle School			0840								1600			
Leavenheath, Old Road, Hare and Hounds	0824	0832		0924	1024	1124	1224	1324	1424	1549	1610	1649	1649	1814
Nayland, Bear Street, Doctors Surgery											1620			
Leavenheath, High Road, opp Shelter	0826	0834		0926	1026	1126	1226	1326	1426	1551	1631	1651	1651	1816
Leavenheath, High Road, Elm Tree Lane	0827	0835		0927	1027	1127	1227	1327	1427	1552	1632	1652	1652	1817
Assington, Assington St, opp Shoulder Of Mutton	0835	0840	0900	0935	1035	1135	1235	1335	1435	1600	1640	1700	1700	1825
Newton Green, A134, Saracens Head	0840	0845	0905	0940	1040	1140	1240	1340	1440	1605	1645	1705	1705	1830
Sudbury, Sudbury Road, Opp Northern Road	0843													
Great Cornard, Head Lane, Upper School	0845													
Sudbury, A134, Opp Chilton Industrial Estate		0850	0910	0945	1045	1145	1245	1345	1445	1610	1650	1710	1710	1835
Sudbury, Waldingfield Road, opp The Firs		0851	0911	0946	1046	1146	1246	1346	1446	1611	1651	1711	1711	1836
Sudbury, Bus Station	0850	0855	0915	0950	1050	1150	1250	1350	1450	1615	1655	1715	1715	1840

Sudbury - Nayland - Colchester 84

Mondays to Saturdays (Except Public Holidays)

From: 1st January 2011

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	84	84	84	84	84	84	84	84	84	84	84	84	84
Notes	NS	Sch	S&H								Sch	S&H	
Sudbury, Bus Station	0650	0705	0720	0850	0950	1050	1150	1250	1350	1420	1545	1550	1735
Sudbury, Springlands Way, Roundabout	0654	0709	0724	0854	0954	1054	1154	1254	1354	1424	1549	1554	1739
Sudbury, Northern Road, Opp Newton Road											1550		
Great Cornard, Head Lane, Upper School											1600		
Sudbury, A134, Chilton Industrial Estate	0655	0710	0725	0855	0955	1055	1155	1255	1355	1425	1550	1555	1740
Newton Green, A134, adj Links View	0700	0714	0730	0900	1000	1100	1200	1300	1400	1430	1605	1600	1745
Assington, Assington Street, Shoulder Of Mutton	0705	0719	0735	0905	1005	1105	1205	1305	1405	1435	1610	1605	1750
Leavenheath, High Road, opp Elm Tree Lane	0713	0724	0743	0913	1013	1113	1213	1313	1413	1443	1616	1613	1758
Leavenheath, High Road, Shelter	0714	0725	0744	0914	1014	1114	1214	1314	1414	1444	1617	1614	1759
Leavenheath, Old Road, opp Hare and Hounds	0717	0728	0746	0916	1016	1116	1216	1316	1416	1446	1619	1616	1801
Stoke by Nayland, Sudbury Road, opp The Blundens	0722	0733	0751	0921	1021	1121	1221	1321	1421	1451	1625	1621	1806
Stoke by Nayland, Church Street, Village Hall	0724	0735	0753	0923	1023	1123	1223	1323	1423	1453	1627	1623	1808
Nayland, Birch Street, Mill Street	0728	0739	0757	0927	1027	1127	1227	1327	1427	1457	1630	1627	1812
Nayland, Bear Street, opp Doctors Surgery	0731	0742	0759	0929	1029	1129	1229	1329	1429	1459	1631	1629	1814
Great Horkesley, Post Office	0736	0746	0804	0934	1034	1134	1234	1334	1434	1504	1635	1634	1819
Horkesley Heath, Half Butt	0739	0751	0807	0937	1037	1137	1237	1337	1437	1507	1638	1637	1822
Colchester General Hospital, Main Entrance	0744			0944	1044	1144	1244	1344	1444	1514	1644	1644	1829
Colchester, Mile End Church, Opp		0753	0812										
Colchester, North Station Layby	0750	0805	0817	0947	1047	1147	1247	1347	1447	1517	1647	1647	1832
Colchester, Bus Station	0755	0815	0825	0955	1055	1155	1255	1355	1455	1525	1655	1655	1840
Lexden, Norman Way Schools	....	0825	....	....	....	....	....	....	....	....	....	....	....

Chappel - Sudbury - Bury St. Edmunds [LIMITED STOP] X16

Wednesday only

from 14th June 2006

Operator	HD		HD
Service	X16		X16
Notes	L		L
Chappel, Post Office	0900	**Bury St. Edmunds,** Bus Station	1320
Great Tey, Church	0905	**Long Melford,** Post Office	1345
Coggeshall, Market Hill	0910	**Sudbury,** Bus Station	1355
Earls Colne, Lion PH	0920	**Bulmer,** Bulmer Tye (Fox)	1400
Halstead, Co-op Store	0930	**Little Maplestead,** Pump	1405
Little Maplestead, Pump	0935	**Halstead,** Co-op Store	1410
Bulmer, Bulmer Tye (Fox)	0940	**Earls Colne,** Lion PH	1420
Sudbury, Bus Station	0945	**Coggeshall,** Market Hill	1430
Long Melford, Post Office	0950	**Great Tey,** Church	1435
Bury St. Edmunds, Angel Hill	1020	**Chappel,** Post Office	1440

Ipswich - Hadleigh - Sudbury

90 91

Mondays to Saturdays (Except Public Holidays)

From: 4th April 2011

Operator	BE	CC	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE
Service	91	90	91	91	91	91	91	91	91	91	91	91	91	91	91	90	91	91	91
Notes		1	NSch	Sch	S								NSch	Sch		Sch			
Ipswich, Northgate High School	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1520	....	....	....
Ipswich, Tuddenham Road Roundabout	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1523	....	....	....
Ipswich, Tower Ramparts Bus Station	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1531	....	....	....
Ipswich, Old Cattle Market	....	0645	0730	0730	....	0815	0915	1015	1115	1215	1315	1415	1415	1515	1540	1615	1715	1815
Ipswich, Ranelagh Road, opp Station Bridge	....	0649	0735	0735	....	0820	0920	1020	1120	1220	1320	1420	1420	1520	1545	1620	1720	1820
Chantry Park, Hadleigh Road, opp Stella Maris	....	0653	0740	0740	....	0825	0925	1025	1125	1225	1325	1425	1425	1525		1625	1725	1825
Ipswich, Suffolk One	....				....										1555			
Sproughton, A1071, Washbrook Turn	....	0656	0743	0743	....	0828	0928	1028	1128	1228	1328	1428	1428	1528	1558	1628	1728	1828
Burstall, A1071, opp Burstall Road	....	0658	0745	0745	....	0830	0930	1030	1130	1230	1330	1430	1430	1530	1600	1630	1730	1830
Hintlesham, A1071, opp The George	....	0700	0748	0748	....	0833	0933	1033	1133	1233	1333	1433	1433	1533	1603	1633	1733	1833
Hintlesham, Cobblers Corner, Clay Hill	....	0702			....													
Hadleigh, Magdalen Road, Bus Station Stand D	....		0758	0758	....	0842	0942	1042	1142	1242	1342	1442	1442	1542	1609	1642	1742	1842
Hadleigh, Highlands Road, High School	....		0800	0800	....	0845	0945	1045	1145	1245	1345	1445	1455	1545	1613	1645	1745	1845
Hadleigh, Magdalen Road, Bus Station Stand A	0645	0708	0802	0802	0802	0850	0950	1050	1150	1250	1350	1450	1458	1550	1618	1650	1750	....
Bower House Tye, A1071, opp Brewers Arms	0655	....	0812	0818	0812	0900	1000	1100	1200	1300	1400	1500	1508	1600	**C**	1700	1800	....
Boxford, Broad Street, opp Fleece	0700	....	0817	0828	0817	0905	1005	1105	1205	1305	1405	1505	1513	1605	....	1705	1805	....
Newton Green, A134, Saracens Head	0705	....	0822	0833	0822	0910	1010	1110	1210	1310	1410	1510	1518	1610	....	1710	1810	....
Great Cornard, Poplar Road, Lindsey Avenue	0710	....	0827	0838	0827	0915	1015	1115	1215	1315	1415	1515	1523	1615	....	1715	1815	....
Sudbury, Bus Station	0715	....	0832	0845	0832	0920	1020	1120	1220	1320	1420	1520	1528	1620	....	1720	1820	....

Sudbury - Hadleigh - Ipswich

90 91

Mondays to Saturdays (Except Public Holidays)

From: 4th April 2011

Operator	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE	BE
Service	91	91	91	91	91C	91	91	91	91	91	91	91	91	91	91	91	91	91
Notes	NS	NS			Sch									Sch	NSch			
Sudbury, Bus Station	....	0700	0725	....	....	0900	1000	1100	1200	1300	1400	1500	1555	1600	1700	1800
Great Cornard, Head Lane, Upper School	....			....	....								1600			
Great Cornard, Poplar Rd, opp Lindsey Avenue	....	0705	0730	....	....	0905	1005	1105	1205	1305	1405	1505	1605	1605	1705	1805
Newton Green, A134, adj Links View	....	0710	0735	....	....	0910	1010	1110	1210	1310	1410	1510	1610	1610	1710	1810
Boxford, Broad Street, o/s Fleece	....	0715	0740	....	....	0915	1015	1115	1215	1315	1415	1515	1615	1615	1715	1815
Bower House Tye, A1107, Brewers Arms	....	0720	0745	....	....	0920	1020	1120	1220	1320	1420	1520	1620	1620	1720	1820
Bildeston, Market Place	....			....	0803											
Bildeston, High Street, Newberry Road	....			....	0805											
Nedging Crossroads, Hadleigh Road	....			....	0810											
Semer, Village Hall	....			....	0811											
Semer Bridge	....			....	0812											
Ivytree Lane Crossroads	....			....	0814											
Hadleigh, Magdalen Road, Bus Station Stand D	....	0730	0755	....		0930	1030	1130	1230	1330	1430	1530	1630	1630	1730	1830
Hadleigh, Highlands Road, High School	....	0735	0800	0830	0830	0935	1035	1135	1235	1335	1435	1535	1635	1635	1735	....
Hadleigh, Magdalen Road, Bus Station Stand A	0700	0740	0805	0835	0835	0940	1040	1140	1240	1340	1440	1540	1640	1640	1740	....
Hintlesham, A1071, The George	0710	0750	0815	0845	0845	0950	1050	1150	1250	1350	1450	1550	1650	1650	1750	....
Burstall, A1071, Burstall Road	0714	0754	0819	0849	0849	0954	1054	1154	1254	1354	1454	1554	1654	1654	1754	....
Sproughton, A1071, opp Washbrook Turn	0716	0756	0821	0851	0851	0956	1056	1156	1256	1356	1456	1556	1656	1656	1756	....
Ipswich, Suffolk One					0855											....
Chantry Park, Hadleigh Road, adj Stella Maris	0719	0759	0824	0854	....	0959	1059	1159	1259	1359	1459	1559	1659	1659	1759	....
Ipswich, Ranelagh Road, Station Bridge	0725	0805	0830	0900	....	1005	1105	1205	1305	1405	1505	1605	1705	1705	1805	....
Ipswich, Old Cattle Market	0730	0810	0835	0905	....	1010	1110	1210	1310	1410	1510	1610	1710	1710	1810	....
Ipswich, Grimwade Street, University College Suffolk	....	**UCS**	....	....	....	....	....	....	....	....	....	....	....	....	....	....

Sudbury - Clare - Haverhill 236

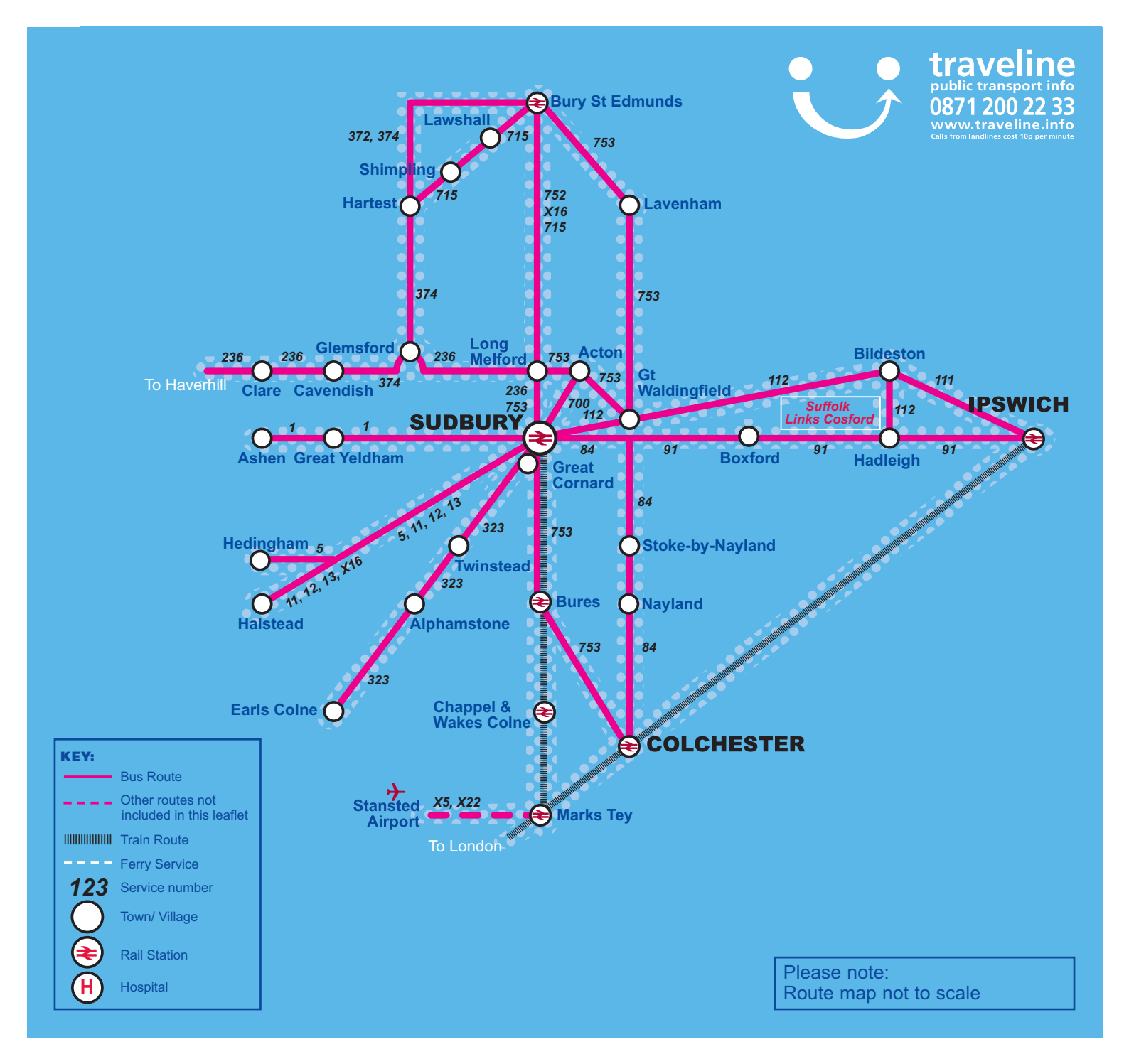
Mondays to Fridays (Except Public Holidays) From: 1st April 2011

Operator	BE	BE	BE	BE	BE	ABC	BE	BE	BE	BE	BE	BE
Service	236	236	236	236	236	343	236	236	236	236	236	236
Great Cornard Upper School (Schooldays Only)	....	....	....	....	....	....	....	....	....	....	1557	....
Sudbury, Bus Station	0645	0745	0845	0945	1045	....	1145	1245	1345	1445	1610	1710
Sudbury, Melford Road, opp Chaucer Road	0650	0750	0850	0950	1050	....	1150	1250	1350	1450	1615	1715
Long Melford, Hall Street, Post Office	0655	0755	0855	0955	1055	....	1155	1255	1355	1455	1620	1720
Glemsford, Broadway, opp Shelter	0700	0800	0900	1000	1100	....	1200	1300	1400	1500	1625	1725
Cavendish, A1092, opp The Bull	0710	0810	0910	1010	1110	....	1210	1310	1410	1510	1635	1735
Clare, Middle School, (Schooldays only)		0813				....				1511		
Clare, Market Hill, opp Memorial	0715	0815	0915	1015	1115	1115	1215	1315	1415	1515	1640	1740
Stoke by Clare, The Street, opp The Lion	0720	0820	0920	1020	....	1120	....	....	1420	1520	1645	....
Baythorne End, Ridgewell Road (W/B)	0725	0825	0925	1025	....	1125	....	....	1425	1525	1650	....
Sturmer, Memorial	0730	0830	0930	1030	....	1130	....	....	1430	1530	1655	....
Haverhill, Bus Station, Arrivals	0735	0835	0935	1035	....	1135	....	....	1435	1535	1700	....
Haverhill, Samuel Ward Upper School (Schooldays Only)	....	0838	....	....	....	....	....	....	....	....	....	....

Haverhill - Clare - Sudbury 236

Mondays to Fridays (Except Public Holidays) From 1st April 2011

Operator	BE	BE	BE	BE	BE	BE	ABC	BE	BE	BE	BE
Service	236	236	236	236	236	236	343	236	236	236	236
Notes							TTh				
Haverhill, Samuel Ward Upper School (Schooldays Only)	....	....	....	....	....	....	....	....	1445	1545	....
Haverhill, Bus Station	0745	0845	0945	1045	....	....	1340	....	1450	1550	1710
Sturmer, Memorial	0750	0850	0950	1050	....	....	1345	....	1455	1555	1715
Baythorne End, Ridgewell Road (E/B)	0755	0855	0955	1055	....	....	1350	....	1500	1600	1720
Stoke by Clare, The Street, The Lion	0800	0900	1000	1100	....	....	1355	....	1505	1605	1725
Clare, Market Hill, Memorial	0805	0905	1005	1105	1205	1305	1400	1405	1510	1610	1730
Clare, Middle School (Schooldays Only)	0808						....		1511		
Cavendish, A1092, The Bull	0810	0910	1010	1110	1210	1310	....	1410	1515	1615	1735
Glemsford, Broadway, Shelter	0820	0920	1020	1120	1220	1320	....	1420	1525	1625	1745
Long Melford, Hall Street, opp Post Office	0825	0925	1025	1125	1225	1325	....	1425	1530	1630	1750
Sudbury, Melford Road, Chaucer Road	0830	0930	1030	1130	1230	1330	....	1430	1535	1635	1755
Sudbury, Bus Station	0835	0935	1035	1135	1235	1335	....	1435	1540	1640	1800
Great Cornard Upper School (Schooldays Only)	0840	....	....	....	....	....	....	....	....	....	....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236
236
Glemsford
236
Long Melford
753
Acton
753
Gt Waldingfield
112
Bildeston
111
To Haverhill
Clare
Cavendish
374
236
753
700
112
Suffolk Links Cosford
112
IPSWICH
SUDBURY
1
1
Ashen
Great Yeldham
84
91
Boxford
91
Hadleigh
91
Great Cornard
84
Hedingham
5
5, 11, 12, 13
323
753
Stoke-by-Nayland
Twinstead
11, 12, 13, X16
323
Halstead
Alphamstone
Bures
Nayland
753
84
323
Earls Colne
Chappel & Wakes Colne
COLCHESTER
Stansted Airport
X5, X22
Marks Tey
To London
KEY:
Bus Route
Other routes not included in this leaflet
Train Route
Ferry Service
123
Service number
Town/ Village
Rail Station
H
Hospital
Please note:
Route map not to scale

Sudbury - Clare - Haverhill 236

Saturdays — From: 1st April 2011

Operator	BE	BE	BE	BE	BE
Service	236	236	236	236	236
Sudbury, Bus Station	0845	1045	1245	1445	1710
Sudbury, Melford Road, opp Chaucer Road	0850	1050	1250	1450	1715
Long Melford, Hall Street, Post Office	0855	1055	1255	1455	1720
Glemsford, Broadway, opp Shelter	0900	1100	1300	1500	1725
Cavendish, A1092, opp The Bull	0910	1110	1310	1510	1735
Clare, Market Hill, opp Memorial	0915	1115	1315	1515	1740
Stoke by Clare, The Street, opp The Lion	0920	....	....	1520	....
Baythorne End, Ridgewell Road (W/B)	0925	....	....	1525	....
Sturmer, Memorial	0930	....	....	1530	....
Haverhill, Bus Station, Arrivals	0935	....	....	1535	....

Haverhill - Clare - Sudbury 236

Saturdays — From: 1st April 2011

Operator	BE	BE	BE	BE	BE
Service	236	236	236	236	236
Haverhill, Bus Station	....	0945	....	....	1550
Sturmer, Memorial	....	0950	....	....	1555
Baythorne End, Ridgewell Road (E/B)	....	0955	....	....	1600
Stoke by Clare, The Street, The Lion	....	1000	....	....	1605
Clare, Market Hill, Memorial	0805	1005	1205	1405	1610
Cavendish, A1092, The Bull	0810	1010	1210	1410	1615
Glemsford, Broadway, Shelter	0820	1020	1220	1420	1620
Long Melford, Hall Street, opp Post Office	0825	1025	1225	1425	1625
Sudbury, Melford Road, Chaucer Road	0830	1030	1230	1430	1630
Sudbury, Bus Station	0835	1035	1235	1435	1635

Hadleigh - Sudbury 112

Saturdays Only — From 4th April 2011

Operator	BE
Service	112
Hadleigh, Magdalen Road, Bus Station	0930
Semer, B1115, Semer Bridge	0938
Bildeston, Market Place, opp Clock Tower	0945
Chelsworth, The Street, opp The Peacock	0948
Monks Eleigh, The Street, opp The Swan	0951
Brent Eleigh, Milden Road, A1141 (S/B)	0954
Little Waldingfield, The Street, Swan	1001
Great Waldingfield, The Heath, Post Office	1004
Sudbury, Bus Station	1013

Sudbury - Hadleigh 112

Saturdays Only — From 4th April 2011

Operator	BE
Service	112
Sudbury, Bus Station	1345
Great Waldingfield, The Heath, opp Post Office	1353
Little Waldingfield, The Street, Swan	1356
Brent Eleigh, A1141, opp Milden Road	1403
Monks Eleigh, The Street, The Swan	1406
Chelsworth, The Street, The Peacock	1409
Bildeston, Market Place, opp Clock Tower	1420
Semer, B1115, opp Semer Bridge	1427
Hadleigh, Magdalen Road, Bus Station	1435

Greenstead Green - Twinstead - Sudbury 323

Thursday only — from 10th May 1999

Operator	HD	HD
Service	323	323
Notes	3	3
Greenstead Green, Hare and Hounds PH	0920	**Sudbury,** Bus Station	1330
Earls Colne, Lion PH	0930	**Ballingdon,** Middleton Road	1333
Earls Colne, Station Road	0931	**Middleton (Essex),** Henny Lane	1337
Colne Engaine, Green	0936	**Great Henny,** Henny Street	1342
Pebmarsh, Kings Head PH	0942	**Lamarsh,** Telephone Kiosk	1349
Pebmarsh, Cross End	0945	**Alphamstone,** The Green	1352
Twinstead, Green	0956	**Twinstead,** Green	1358
Alphamstone, The Green	1002	**Pebmarsh,** Cross End	1409
Lamarsh, Telephone Kiosk	1005	**Pebmarsh,** Kings Head PH	1412
Great Henny, Henny Street	1012	**Colne Engaine,** Green	1418
Middleton (Essex), Henny Lane	1017	**Earls Colne,** Lion PH	1427
Ballingdon, Middleton Road	1021	**Earls Colne,** Station Road	1428
Sudbury, Bus Station	1024	**Greenstead Green,** Hare and Hounds PH	1434

Halstead - Bures - Twinstead 327

Fridays Only (Except Public Holidays) — From: 18th June 2010

Operator	DEVE	DEVE
Service	327	327
Halstead, Butler Road Car Park	1245	**Twinstead,** Green	0935
Halstead, High Street	1247	**Twinstead,** Cripple Corner	0939
Earls Colne, The Lion	1258	**Alphamstone,** Green	0946
Earls Colne, Church Hill	1300	**Lamarsh,** Alphamstone Road	0951
White Colne, Vent Houses	1305	**Bures,** Tawneys Ride, o/s 15	0957
Bures, The Swan	1316	**Bures,** The Swan	1000
Bures, Tawneys Ride, o/s 15	1319	**White Colne,** Vent Houses	1011
Lamarsh, Alphamstone Road	1325	**Earls Colne,** Church Hill	1018
Alphamstone, Green	1330	**Earls Colne,** The Lion	1020
Twinstead, Cripple Corner	1337	**Halstead,** High Street	1029
Twinstead, Green	1341	**Halstead,** Butler Road Car Park	1031

Sible Hedingham - The Belchamps - Sudbury 331

Thursdays and Saturdays (Except Public Holidays) — From: 9th October 2010

Operator	DEVE	DEVE
Service	331	331
Notes	S	ThS
Sible Hedingham, The Swan	0900	1330
Sible Hedingham, Sugar Loaves	0902	1336
Castle Hedingham, Bell	0906	1340
Castle Hedingham, Memories	0909	1343
Great Yeldham, The Green	0917	1347
Little Yeldham, Church	0922	1352
Belchamp St Paul, Green	0928	1358
Belchamp Otten	0933	1403
Borley Green, Borleylodge Farm	0941	1411
Borley, Church	0944	1414
Sudbury, Bus Station	0954	1424

Sudbury - The Belchamps - Sible Hedingham 331

Thursdays and Saturdays (Except Public Holidays) — From: 9th October 2010

Operator	DEVE	DEVE
Service	331	331
Notes	S	ThS
Sudbury, Bus Station	1200	1630
Borley, Church	1210	1640
Borley Green, Borleylodge Farm	1213	1643
Belchamp Otten	1221	1651
Belchamp St Paul, Green	1226	1656
Little Yeldham, Church	1232	1702
Great Yeldham, The Green	1237	1707
Castle Hedingham, Memories	1245	1715
Castle Hedingham, Bell	1248	1718
Sible Hedingham, Sugar Loaves	1252	1722
Sible Hedingham, The Swan	1258	1728

Clare - Hartest - Bury St Edmunds 372, 374

Mondays to Saturdays (Except Public Holidays) From: 17th January 2011

Operator	CH	CH	CH	CH	CH
Service	374	374	372	374	374
Notes	S&H	Sch	Sch		
Clare, Stoke Road, Westfields	0730	0730	....	1000	1400
Clare, Market Hill, Memorial	0732	0732	....	1002	1402
Cavendish, A1092, The Bull	0738	0738	....	1008	1408
Glemsford, Broadway, Shelter	0745	0745	....	1015	1415
Boxted, Boxted Hill, Blacksmith Corner	0750	0750	....	1020	1420
Hartest, Workhouse Hill, opp Hartest Green	0753	0753	0753	1023	1423
Brockley Green, Bury Road, Bus Shelter	0758	0758	0758	1027	1427
Gulling Green, Bury Road, opp Brockley Place	0803	0803	I	1029	1429
Scoles Gate, Rede Road, opp Cooks Lane	I	I	0801	I	I
Rede, Rede Road, adj Bus Shelter	I	I	0803	I	I
Whepstead, Chedburgh Road, opp Doveden Hall	I	I	0810	I	I
Whepstead, Brockley Road, opp Church Hill	0809	0809	I	1032	1432
Horringer, Chevington Road, opp Sharpes Lane	0817	0817	0820	1037	1437
Horringer, The Street, opp Meadow Drive	0818	0818	0821	1038	1438
Horringer Court, Middle School	I	0822	0825	I	I
Bury St Edmunds, opp West Suffolk Hospital	0825	0906**C**	I	1044	1444
Bury St Edmunds, Parkway South, St Louis Sch	I	0834	(0837)	I	I
Bury St Edmunds, St Andrews Street, o/s Arc	0829	0837	(0840)	1048	1448
Bury St Edmunds, West Suffolk College	I	0832	0835	I	I
Bury St Edmunds, Klondike, St Benedicts	I	0840	0845	I	I
Bury St Edmunds, Bus Station	0830	....	....	1050	1450

Bury St Edmunds - Hartest - Clare 374

Mondays to Saturdays (Except Public Holidays) From: 17th January 2011

Operator	CH	CH	CH	CH	CH
Service	374	374	374	374	374
Notes			S&H	Sch	
Bury St Edmunds, Parkway South, St Louis Sch	....	....	....	1540	....
Bury St Edmunds, Bus Station	0900	1300	1545	1545	1725
Bury St Edmunds, St Andrews Street, o/s Arc	0901	1301	1546	I	1726
Bury St Edmunds, Klondike, St Benedicts	I	I	I	1557	I
Bury St Edmunds, West Suffolk College	I	I	I	1600	I
Bury St Edmunds, West Suffolk Hospital	0906	1306	1551	1610	1731
Horringer, The Street, Meadow Drive	0912	1312	1557	1619	1737
Horringer, Chevington Road, Sharpes Lane	0913	1313	1558	1620	1738
Whepstead, Brockley Road, Church Hill	0918	1318	1603	1625	1743
Brockley Green, Bury Road, opp Bus Shelter	0923	1323	1608	1630	1748
Hartest, Workhouse Hill, Hartest Green	0927	1327	1612	1634	1752
Boxted, Boxted Hill, opp Blacksmiths Corner	0930	1330	1615	1637	1755
Glemsford, Broadway, opp Shelter	0935	1335	1620	1642	1800
Cavendish, A1092, opp The Bull	0942	1342	1627	1649	1807
Clare, Market Hill, opp Memorial	0948	1348	1633	1655	1813
Clare, Stoke Road, opp Westfields	0950	1350	1635	1657	1815

Shimpling - Lawshall - Bury St Edmunds 375

Mondays to Saturdays (Except Public Holidays) From 4th April 2011

Operator	MU	FX	MU	MU
Service	375	375	375	375
Notes	1Sch	1NSch	1WFS	1WFS
Bridge Street	0735	0740	0925	....
Shimpling, Mill Hill (N/B)	0740	0745	0930	....
Shimpling Street, The Street, opp Hallifax Place	0743	0748	0933	1326
Shimpling, Mill Hill (N/B)	I	I	I	1329
Bridge Street	I	I	I	1334
Cockfield, A134, Thorn Court Corner	0747	0752	0937	1338
Lawshall, The Street, opp Primary School	0755	0759	0944	1345
Hawstead Green, Bury Road, opp Bus Shelter	0802	0805	0950	1351
Nowton, Low Green, opp The Pound (N/B)	0806	0809	0954	1355
Bury St Edmunds, St Andrews St Sth, St Louis Middle Sch	0812	0814	0957	1358
Bury St Edmunds, Arc Shopping Centre	0815	0815	0958	1359
Bury St Edmunds, Bus Station	I	0817	1000	1401
Bury St Edmunds, King Edward V1 School, Springfield Rd	0825	....	....	....

Bury St Edmunds - Lawshall - Shimpling 375

Mondays to Saturdays (Except Public Holidays) From 4th April 2011

Operator	MU	MU	FX	MU	FX
Service	375	375	375	375	375
Notes	1WFS	1Sch	1NSch	1Sch	1NSch
King Edward V1 School, Springfield Road	....	1600	....	....	....
Bury St Edmunds, Bus Station	1300	1610	1610	1740	1740
Bury St Edmunds, St Andrews Street South opp The Arc	1302	1613	1612	1742	1742
Nowton, Low Green, opp The Pound (S/B)	1307	1620	1617	1747	1747
Hawstead Green, Bury Road, Bus Shelter	1311	1624	1621	1751	1751
Lawshall, The Street, Primary School	1317	1630	1627	1757	1757
Cockfield, A134, opp Thorn Court Corner	1323	1637	1633	1803	1803
Shimpling Street, The Street, Hallifax Place	1326	**R**	**R**	**R**	**R**
Shimpling, Mill Hill (S/B)	1329	**R**	**R**	**R**	**R**
Bridge Street	1334	**R**	**R**	**R**	**R**

Stanstead - Lawshall - Sudbury 715

Thursday only — from 2nd September 1991

Operator	FX	FX
Service	715	715
Stanstead, Church	0915	
Boxted, Blacksmiths (Boxted Hill)	0922	
Hartest, War Memorial	0924	
Shimpling, Mill Hill	0932	
Lawshall, The Street	0940	
Shimpling Street, Hallifax Place	0946	
Shimpling, Thorn Court Corner	0952	
Alpheton, Garage	0959	
Bridge Street, Rose & Crown PH	1002	
Long Melford, Post Office	1006	
Sudbury, Bus Station	1017	
Sudbury, Bus Station		1245
Long Melford, Post Office		1255
Bridge Street, Rose & Crown PH		1300
Alpheton, Garage		1305
Shimpling, Thorn Court Corner		1310
Shimpling Street, Hallifax Place		1315
Lawshall, The Street		1320
Shimpling, Mill Hill		1330
Hartest, War Memorial		1338
Boxted, Blacksmiths (Boxted Hill)		1340
Stanstead, Church		1347

Sudbury - Long Melford (Circular) 716

Monday to Friday — from 2nd April 2006

Operator	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX	FX
Service	716	716	716	716	716	716	716	716	716	716	716	716	716	716	716
Sudbury, Bus Station	....	....	0933	1003	1033	1103	1133	1303	1333	1403	1433	....	1620	1650	1720
Sudbury, Melford Road	....	....	0935	1005	1035	1105	1135	1305	1335	1405	1435	....	1622	1652	1722
Sudbury, Chaucer Estate	....	....	0936	1006	1036	1106	1136	1306	1336	1406	1436	....	1623	1653	1723
Long Melford, Bull PH	0743	....	0943	1013	1043	1113	1143	1313	1343	1413	1443	....	1630	1700	1730
Long Melford, Cordell Road	0744	....	0944	1014	1044	1114	1144	1314	1344	1414	....	....	1631	1701	....
Long Melford, Olivers Close	0746	0916	0946	1016	1046	1116	1146	1316	1346	1416	....	....	1633	1703	....
Long Melford, Cordell Road	0747	0917	0947	1017	1047	1117	1147	1317	1347	1417	....	....	1634	1704	....
Long Melford, Bull PH	0749	0919	0949	1019	1049	1119	1149	1319	1349	1419	....	1606	1636	1706	....
Sudbury, Chaucer Estate	0756	0926	0956	1026	1056	1126	1156	1326	1356	1426	....	1613	1643	1713	....
Sudbury, Melford Road	0757	0927	0957	1027	1057	1127	1157	1327	1357	1427	....	1614	1644	1714	....
Sudbury, Bus Station	0758	0928	0958	1028	1058	1128	1158	1328	1358	1428	....	1615	1645	1715	....

Bures - Gt Cornard - Sudbury - Long Melford - Bury St Edmunds 752

Schooldays Only — From: 1st November 2010

Operator	CH	CH	CH
Service	752	752	752
Bures, Bridge Street, opp Church	0730	....	0730
Little Cornard, Bures Road, Opp Spout Lane	0735	....	0735
Great Cornard, Head Lane, opp Rugby Road	0740	....	0740
Great Cornard, Highbury Way, Queensway	0741	....	0741
Great Cornard, Poplar Rd, opp Lindsey Avenue	0744	....	0744
Sudbury, Springlands Way, Roundabout	0747	....	0747
Sudbury, Bus Station, Stand A	|	0752	0752
Sudbury, Melford Road, opp York Road	|	0756	0756
Long Melford, Hall Street, Post Office	0802	|	0802
Bridge Street, A134, Rose and Crown	0809	0809	0809
Alpheton, Church Lane, The Green	0811	0811	0811
Cockfield, A134, opp A1141	0816	0816	0816
Bradfield Combust, The Street, The Manger	0818	0818	0818
Sicklesmere, A134, Post Office	0824	0824	0824
Bury St Edmunds, Out Risbygate, opp West Suffolk College	0840	0840	|
Bury St Edmunds, Klondike, St Benedicts	0845	0845	|
Bury St Edmunds, Parkway South, St Louis Sch	....	....	0835
Bury St Edmunds, King Edward VI School	....	....	0839

Bury St Edmunds - Long Melford - Sudbury - Gt Cornard - Bures 752

Schooldays Only — From: 1st November 2010

Operator	CH	CH	CH	CH
Service	752	752	752	752
Bury St Edmunds, Parkway South, St Louis Sch	....	1540	....	....
Bury St Edmunds, King Edward VI School	....	1550	....	....
Bury St Edmunds, Klondike, St Benedicts	....	|	1555	....
Bury St Edmunds, West Suffolk College	1505	|	1600	1705
Sicklesmere, A134, opp Post Office	1510	1610	1610	1710
Bradfield Combust, The Street, opp The Manger	1513	1613	1613	1713
Cockfield, A134, A1141	1515	1615	1615	1715
Alpheton, Church Lane, The Green	1523	1623	1623	1723
Bridge Street, A134, opp Rose and Crown	1525	1625	1625	1725
Long Melford, Hall Street, opp Post Office	1530	1630	1630	1730
Sudbury, Melford Road, Woodhall Road	1535	1635	1635	1735
Sudbury, Bus Station, Stand A	1540	1640	1640	1740
Sudbury, Springlands Way, Roundabout	1545	1645	1645	1745
Great Cornard, Poplar Road, Lindsey Avenue	1547	1647	1647	1747
Great Cornard, Highbury Way, opp Queensway	1548	1648	1648	1748
Great Cornard, Head Lane, Rugby Road	1550	1650	1650	1750
Little Cornard, Bures Road, Spout Lane	....	....	1655	1755
Bures, Bridge Street, adj Church	....	....	1700	1800

SUFFOLK LINK

COSFORD AREA

LINKING SUFFOLK TO YOU

GET ON BOARD!

Suffolk Links Cosford is a Demand Responsive Transport scheme serving the Bradfield, Edwardstone & Wattisham area.

- Where possible the service will make connections with bus or rail services for travel further afield.
- For journeys within the service area where connecting to other services is inappropriate, end to end journeys will be possible.
- Simply call **01473 826242** up to a week before you wish to travel and book your journey.
- Suffolk Links will then pick you up from the stop agreed with the operator and take you where you want to go within the defined operating area.
- The booking service is open from 1000 to 1300 Monday to Friday.

Sudbury - Bury St Edmunds 753

Monday to Saturday — from 2nd September 2007

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	753	753	753	753	753	753	753	753	753	753	753	753	753
Notes			S&H	S	Col								Sch
Bures, High Street, opp The Bridge	0645	0715	....	....	....	....	....	....	....	....	....	....	....
Little Cornard, Bures Road, Spout Lane	0650	0720	....	....	....	....	....	....	....	....	....	....	....
Great Cornard, Highbury Way, Queensway	0658	0728	0858	0858	0858	....	....	....	....	....	....	....	....
Sudbury, Bus Station	0705	0735	0910	0910	0910	1010	1110	1210	1310	1410	1510	1610	1710
Long Melford, Hall Street, Post Office	0715	0745	0917	0917	0917	1017	1117	1217	1317	1417	1517	1617	1717
Acton, High Street, opp Queensway	0720	0750	0927	0927	0927	1027	1127	1227	1327	1427	1527	1627	1727
Great Waldingfield, opp Social Club	0725	0755	0930	0930	0930	1030	1130	1230	1330	1430	1530	1630	1730
Lavenham, High Street, opp The Swan PH	0735	0805	0940	0940	0940	1040	1140	1240	1340	1440	1540	1640	1740
Cockfield, Mill Hill Corner, Bus Shelter	0742	0812	0947	0947	0947	1047	1147	1247	1347	1447	1547	1647	1747
Hoggards Green, Bury Road, Shelter	0748	0818	0952	0952	0952	1052	1152	1252	1352	1452	1552	1652	1752
Great Whelnetham, opp Raynsford Road	0753	0823	0957	0957	0957	1057	1157	1257	1357	1457	1557	1657	1757
Bury St Edmunds, Nurses Home	0802	0832	1005	1005	1005	1105	1205	1305	1405	1505	1605	1705	1805
Bury St Edmunds, Bus Station	0810	0840	1010	1010	1010	1110	1210	1310	1410	1510	1610	1710	1810
Bury St Edmunds, opp West Suffolk College	....	....	....	....	1015	....	....	....	....	....	....	....	....

Bury St Edmunds - Sudbury 753

Monday to Saturday — from 2nd September 2007

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753
Notes	Sch	S	S&H							S	S&H	Col	S	S&H	Col	S	S&H	Col	S	S&H	Col		
Bury St Edmunds, opp West Suffolk College	....	....	....	....	....	....	....	....	....	....	....	1405	....	....	1505	....	....	1605	....	....	1705	....	
Bury St Edmunds, Bus Station	....	....	....	0815	0915	1015	1115	1215	1315	1415	1415	1415	1515	1515	1515	1615	1615	1615	1715	1715	1715	1815	
Bury St Edmunds, opp West Suffolk Hospital	....	....	....	0820	0920	1020	1120	1220	1320	1420	1420	1420	1520	1520	1520	1620	1620	1620	1720	1720	1720	1820	
Great Whelnetham, Raynsford Road	....	....	....	0830	0930	1030	1130	1230	1330	1430	1430	1430	1530	1530	1530	1630	1630	1630	1730	1730	1730	1830	
Hoggards Green, Bury Road, opp Shelter	....	....	....	0835	0935	1035	1135	1235	1335	1435	1435	1435	1535	1535	1535	1635	1635	1635	1735	1735	1735	1835	
Cockfield, Mill Hill Corner, opp Bus Shelter	....	....	....	0840	0940	1040	1140	1240	1340	1440	1440	1440	1540	1540	1540	1640	1640	1640	1740	1740	1740	1840	
Lavenham, High Street, The Swan PH	0810	0810	0810	0845	0945	1045	1145	1245	1345	1445	1445	1445	1545	1545	1545	1645	1645	1645	1745	1745	1745	1845	
Great Waldingfield, Tentree Rd, o/s Social Club	0820	0820	0820	0855	0955	1055	1155	1255	1355	1455	1455	1455	1555	1555	1555	1655	1655	1655	1755	1755	1755	1855	
Acton, High Street, Queensway	0823	0823	0823	0858	0958	1058	1158	1258	1358	1458	1458	1458	1558	1558	1558	1658	1658	1658	1758	1758	1758	1858	
Long Melford, Hall Street, opp Post Office	0833	0833	0833	0905	1005	1105	1205	1305	1405	1505	1505	1505	1605	1605	1605	1705	1705	1705	1805	1805	1805	1905	
Sudbury, Tudor Road, Upper School	0840																						
Sudbury, Bus Station	0843	0843	0843	0915	1015	1115	1215	1315	1415	1515	1515	1515	1615	1615	1615	1715	1715	1715	1820	1820	1820	1915	
Great Cornard, Highbury Way, opp Queensway	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1825	1825	1825	1920	
Little Cornard, Bures Road, opp Spout Lane	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1833	1833	1833	1925	
Bures, High Street, The Bridge	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1840	1840	1840	1930	

Colchester - Sudbury 753

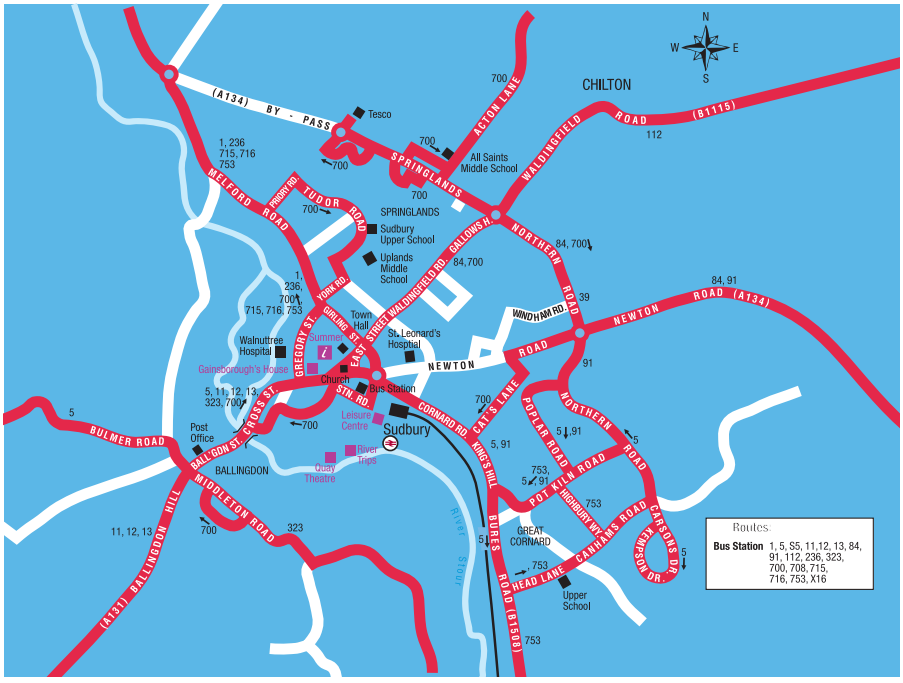
Monday to Saturday — from 2nd September 2007

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	753	753	753	753	753	753	753	753	753	753	753	753	753	753
Notes										Sch				
Lexden, Norman Way Schools	....	....	....	....	....	....	....	....	....	1545	....	....	....	....
Colchester, Bus Station	....	0745	0915	1015	1115	1215	1315	1415	1515		1615	1715	1815	1845
Colchester, Head Street	....	0748	0918	1018	1118	1218	1318	1418	1518	1555	1618	1718	1818	1848
Colchester, North Station Layby	....	0755	0925	1025	1125	1225	1325	1425	1525	1600	1625	1725	1825	1855
West Bergholt, Queens Head PH	....									1610				
West Bergholt, Treble Tile PH	....	0800	0930	1030	1130	1230	1330	1430	1530		1630	1730	1830	1900
Wormingford, Sandy Hill	....	0810	0937	1037	1137	1237	1337	1437	1537	1617	1637	1737	1837	1907
Bures, High Street, opp The Bridge	0630	0820	0945	1045	1145	1245	1345	1445	1545	1625	1645	1745	1845	1915
Little Cornard, Bures Road, Spout Lane	0635	0825	0950	1050	1150	1250	1350	1450	1550	1630	1650	1750	1850	....
Great Cornard, Highbury Way, Queensway	0640	0835	0958	1058	1158	1258	1358	1458	1558	1638	1658	1758	1858	....
Sudbury, Bus Station	0645	0840	1005	1105	1205	1305	1405	1505	1605	1645	1710	1810	1905	....
Long Melford, Hall Street, Post Office	....	....	....	....	....	....	....	....	....	....	1717	1815	....	....
Acton, High Street, opp Queensway	....	....	....	....	....	....	....	....	....	....	1727	1820	....	....
Great Waldingfield, Tentree Road	....	....	....	....	....	....	....	....	....	....	1730	1825	....	....

Sudbury - Colchester 753

Monday to Saturday — from 2nd September 2007

Operator	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH	CH
Service	753	753	753	753	753	753	753	753	753	753	753	753	753	753	753
Notes		Sch		S	S&H	Sch									
Great Waldingfield, Tentree Road	....	....	0720	0750	0750	0750	....	....	....	....	....	....	....	....	....
Acton, High Street, Queensway	....	....	0723	0753	0753	0753	....	....	....	....	....	....	....	....	....
Long Melford, Hall Street, opp Post Office	....	....	0733	0803	0803	0803	....	....	....	....	....	....	....	....	....
Sudbury, Tudor Road, Upper School	....	....				0810	....	....	....	....	....	....	....	....	....
Sudbury, Bus Station	0650	0720	0750	0820	0820	0820	0920	1020	1120	1220	1320	1420	1520	1620	1720
Great Cornard, Highbury Way, opp Queensway	0655	0725	0755	0825	0825	0825	0925	1025	1125	1225	1325	1425	1525	1625	1725
Little Cornard, Bures Road, opp Spout Lane	0703	0733	0803	0833	0833	0833	0933	1033	1133	1233	1333	1433	1533	1633	1733
Bures, High Street, The Bridge	0710	0740	0810	0840	0840	0840	0940	1040	1140	1240	1340	1440	1540	1640	1740
Wormingford, Peartree Hill, Opp	0715	0745	0815	0845	0845	0845	0945	1045	1145	1245	1345	1445	1545	1645	1745
West Bergholt, Queens Head PH		0800													
West Bergholt, Treble Tile PH	0725		0825	0855	0855	0855	0955	1055	1155	1255	1355	1455	1555	1655	1755
Colchester, North Station Layby	0732	0812	0832	0902	0902	0902	1002	1102	1202	1302	1402	1502	1602	1702	1802
Colchester, Bus Station	0740	0820	0840	0910	0910	0910	1010	1110	1210	1310	1410	1510	1610	1710	1810
Lexden, Norman Way Schools	....	0830	....	....	....	....	....	....	....	....	....	....	....	....	....



Key to Town Plan

- Road with bus route
- Road without bus route
- Service Number (Direction of travel) — 123
- Rail Line
- Rail Station
- Bridge
- Public Building
- Tourist Information Centre
- Place of Interest
- River

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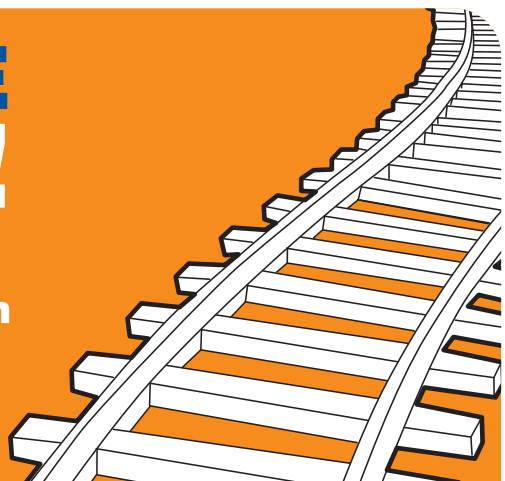

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Bures
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Marks Tey
with connecting services
to and from
Colchester, Chelmsford,
London Liverpool St.

Valid from 23 May 2010

Sudbury to Marks Tey

Mondays to Fridays

Sudbury	d	0530	0630	0717	0800	0900	1000	1100	1200	1300	1400	1500	1554
Bures	d	0537	0637	0724	0807	0907	1007	1107	1207	1307	1407	1507	1601
Chappel & Wakes Colne	d	0543	0643	0730	0813	0913	1013	1113	1213	1313	1413	1513	1607
Marks Tey	a	0549	0649	0736	0819	0919	1019	1119	1219	1319	1419	1519	1613
Chelmsford	a	*0614e*	*0714e*	*0809e*	*0844e*	*0942e*	*1040e*	*1139e*	*1239e*	*1339e*	*1439e*	*1539e*	*1639e*
London Liverpool St.	a	*0649e*	*0751e*	*0848e*	*0922e*	*1017e*	*1118e*	*1216e*	*1316e*	*1416e*	*1516e*	*1616e*	*1715e*
Colchester	a	*0630e*	*0704e*	*0756e*	*0832e*	*0937e*	*1037e*	*1137e*	*1237e*	*1337e*	*1437e*	*1537e*	*1641e*

Sudbury	d	1640	1731	1831	1922	2008	2100	2200	
Bures	d		1738	1838	1929	2015	2107	2207	
Chappel & Wakes Colne	d		1744	1844	1935	2021	2113	2213	
Marks Tey	a	1656	1750	1850	1941	2027	2119	2219	
Chelmsford	a	*1715e*	*1813e*	*1912e*	*2011e*	*2058e*	*2139e*	*2239e*	
London Liverpool St.	a	*1749e*	*1851e*	*1947e*	*2046e*	*2133e*	*2216e*	*2316e*	
Colchester	a	*1709e*	*1803e*	*1903e*	*2008e*	*2038e*	*2138e*	2230	

Saturdays

Sudbury	d	0700	0800	0900	1000	1100	1200	1300			2000	2100	2200
Bures	d	0707	0807	0907	1007	1107	1207	1307	then	at	2007	2107	2207
Chappel & Wakes Colne	d	0713	0813	0913	1013	1113	1213	1313	these	mins	2013	2113	2213
Marks Tey	a	0719	0819	0919	1019	1119	1219	1319	past	each	2019	2119	2219
Chelmsford	a	*0739e*	*0839e*	*0939e*	*1039e*	*1139e*	*1239e*	*1339e*	hour	until	*2039e*	*2139e*	*2239e*
London Liverpool St.	a	*0816e*	*0916e*	*1016e*	*1116e*	*1216e*	*1316e*	*1416e*			*2116e*	*2216e*	*2316e*
Colchester	a	*0737e*	*0837e*	*0937e*	*1037e*	*1137e*	*1237e*	*1337e*			*2037e*	*2137e*	2230

Sundays

Sudbury	d	0740	0840	0940	1040	1140	1240	1340			1940	2040	2140
Bures	d	0747	0847	0947	1047	1147	1247	1347	then	at	1947	2047	2147
Chappel & Wakes Colne	d	0753	0853	0953	1053	1153	1253	1353	these	mins	1953	2053	2153
Marks Tey	a	0759	0859	0959	1059	1159	1259	1359	past	each	1959	2059	2159
Chelmsford	a	*0829e*	*0929e*	*1029e*	*1129e*	*1229e*	*1329e*	*1429e*	hour	until	*2029e*	*2129e*	*2229e*
London Liverpool St.	a	*0912e*	*1012e*	*1112e*	*1212e*	*1312e*	*1412e*	*1512e*			*2112e*	*2212e*	*2312e*
Colchester	a		*0912e*	*1012e*	*1112e*	*1212e*	*1312e*	*1412e*			*2012e*	*2112e*	2209

Route improvement work

At weekends and occasionally late in the evening during the week, route improvements may have to be carried out. Fully updated information is available in advance on our website at **nationalexpress.com/alterations**

Marks Tey to Sudbury

Mondays to Fridays

Colchester 🚌 ..... d	*0548e*	*0629e*	*0718e*	*0818e*	*0917e*	*1017e*	*1117e*	*1217e*	*1317e*	*1417e*	*1517e*	*1547e*
London Liverpool St. ⊖ .... d		*0523e*	*0638e*	*0738e*	*0838e*	*0938e*	*1038e*	*1138e*	*1238e*	*1338e*	*1438e*	*1518e*
Chelmsford 🚌 ..... d		*0600e*	*0712e*	*0812e*	*0912e*	*1012e*	*1112e*	*1212e*	*1312e*	*1412e*	*1512e*	*1551e*
Marks Tey ..... d	0557	0653	0740	0833	0933	1033	1133	1233	1333	1433	1531	1617
Chappel & Wakes Colne ... d	0603	0659		0839	0939	1039	1139	1239	1339	1439	1537	1623
Bures ..... d	0609	0705		0845	0945	1045	1145	1245	1345	1445	1543	1629
Sudbury ..... a	0616	0712	0756	0852	0952	1052	1152	1252	1352	1452	1552	1636

Colchester 🚌 ..... d	*1653e*	*1749e*	*1849e*	*1933e*	*2015e*	*2117e*	
London Liverpool St. ⊖ .... d	*1615e*	*1708e*	*1802e*	*1838e*	*1938e*	*2038e*	
Chelmsford 🚌 ..... d	*1645e*	*1735e*	*1835e*	*1913e*	*2011e*	*2111e*	
Marks Tey ..... d	1707	1805	1859	1945	2033	2133	
Chappel & Wakes Colne ... d	1713	1811	1905	1951	2039	2139	
Bures ..... d	1719	1817	1911	1957	2045	2145	
Sudbury ..... a	1726	1824	1920	2006	2052	2152	

Saturdays

Colchester 🚌 ..... d	*0617e*	*0717e*	*0817e*	*0917e*	*1017e*				*1717e*	*1817e*	*1917e*	*2017e*	*2117e*
London Liverpool St. ⊖ .... d	*0530e*	*0638e*	*0738e*	*0838e*	*0938e*	then	at		*1638e*	*1738e*	*1838e*	*1938e*	*2038e*
Chelmsford 🚌 ..... d	*0607e*	*0712e*	*0812e*	*0912e*	*1012e*	these	mins		*1712e*	*1811e*	*1911e*	*2012e*	*2112e*
Marks Tey ..... d	0633	0733	0833	0933	1033	past	each		1733	1833	1933	2033	2133
Chappel & Wakes Colne ... d	0639	0739	0839	0939	1039	hour	until		1739	1839	1939	2039	2139
Bures ..... d	0645	0745	0845	0945	1045				1745	1845	1945	2045	2145
Sudbury ..... a	0652	0752	0852	0952	1052				1752	1852	1952	2052	2152

Sundays

Colchester 🚌 ..... d	0707	*0806e*	*0906e*	*1006e*	*1106e*	*1206e*	*1306e*			*1906e*	*2006e*	*2106e*
London Liverpool St. ⊖ .... d			*0802e*	*0902e*	*1002e*	*1102e*	*1202e*	then	at	*1802e*	*1902e*	*2002e*
Chelmsford 🚌 ..... d			*0842e*	*0942e*	*1042e*	*1142e*	*1242e*	these	mins	*1842e*	*1942e*	*2042e*
Marks Tey ..... d	0715	0815	0915	1015	1115	1215	1315	past	each	1915	2015	2115
Chappel & Wakes Colne ... d	0721	0821	0921	1021	1121	1221	1321	hour	until	1921	2021	2121
Bures ..... d	0727	0827	0927	1027	1127	1227	1327			1927	2027	2127
Sudbury ..... a	0734	0834	0934	1034	1134	1234	1334			1934	2034	2134

timetable key

a	Arrival time
d	Departure time
e	Change at Marks Tey
⊖	Interchange with London Underground
🚌	PlusBus operates from this station

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Appendix C – Trip Generation Analysis – Main Test

C1 Introduction

C1.1 Overview

As part of the Sudbury Transport Study, AECOM have been requested to undertake a high level review of the potential transport impacts associated with the proposed growth areas in the town. This appendix sets out the methodology and assumptions behind the identification of relevant "external" trip rates and trip generations for each of the growth areas and the assignment of the relevant vehicular trips to the local highway network. This information is summarised in Section 4 of the main Sudbury Transport Study Report.

C1.2 Proposed Growth Areas

Three broad growth areas have been identified, and are shown in Figure 4.1 of the main report.

- Chilton mixed-use development, comprising residential, employment, community, leisure, retail and educational facilities. Located to the north of the A134 Springlands Way and west of the B1115 Waldingfield Road, the site is identified as a core allocation within the 2006 Local Plan.
- County Farm (East) employment development, proposed to contain a mix of B1 and B8 land uses, including a call centre, and located to the north of Church Field Road. An application for this development has been submitted but to date planning permission has yet to be granted.
- The Draft Core Strategy indicates that additional residential growth will take place to the north-east of the town. An approximate area for this growth is indicated by the East of Sudbury area to be located either side of A134 Newton Road.

C1.3 Development Scenarios and Assumptions

AECOM have been requested to consider the impact of the general levels of development anticipated in Sudbury up to 2031, associated with the growth areas identified above.

Table C1 below identifies the potential quantum of development associated with the various growth areas.

Table C1 – Growth Area Quantum

Growth Area	Land Use	Size	Details
Chilton Growth Area	Residential	1,050 units	Mostly housing with up to 35% affordable
	Employment	26,730sqm	B1 Office
		35,640sqm	B1(c) / B2 Industry
		26,730sqm	B8 Warehouse
		89,100sqm	Total
	Education	210 pupil	Single form entry Primary School
	Retail	2,700sqm	Neighbourhood Shopping Centre
	Community	Unknown	Community Centre
East of Sudbury	Residential	500 units	Housing with up to 35% affordable
County Farm (East)	Employment	1,610sqm	B1 Office
		1,080sqm	B1 Call Centre
		23,00sqm	B8 Warehouse
		25,690sqm	Total

Direct Tel: +44 (0)1727 53 5433
T +44 (0)1727 535000
F +44 (0)1727 535099
E alex.keene@aecom.com
www.aecom.com

AECOM House
63-77 Victoria Street
St Albans
AL1 3ER
United Kingdom

Our analysis assumes that there will be the development of some 1,550 dwellings within Sudbury, of which 1,050 would be provided on the Chilton mixed use development and accessed via Aubrey Drive with the remaining 500 provided on a new site to the north-east of the town, accessed from Newton Road. In total, 89,100sqm GFA of employment land use has been assumed as part of the mixed-use development with a combination of B1 office, B1(c) / B2 industrial and B8 Warehousing uses. For the purposes of our assessment we have assumed the employment proposals put forward by the emerging Chilton Woods Masterplan team as a likely indication of the form of employment which would comprise the 20ha identified for this area within the core strategy. This would be split between the main site, identified in Policy CP01(b) of the local plan, to be accessed primarily from a new A134 junction, and the north-east of the Chilton development, Policy CP01(c) and accessed from the B1115 Waldingfield Road. The split has been based on the relevant sizes of these plots identified in the Local Plan, with a 74% to 26% split in favour of CP01(b), with it assumed that both areas would have a similar split of employment land types.

It should be highlighted that, although providing an emerging picture of the developer's proposals, the Chilton Woods's masterplan and associated access strategy have yet to be agreed with the local planning or highway authorities. Whilst we have adopted aspects of the development quantum and access strategy for the purposes of the analysis in this study, this has been done on a 'without prejudice' basis and should not be assumed to reflect BDC or SCC approval of the current proposals.

Additional employment development has also been considered in the form of the County Farm (East) site. For the purposes of this report, it has been assumed that all vehicles associated with this development access the main highway network via the B1115 Waldingfield Road / Church Field Road roundabout.

A summary of the assumed development associated with the main test scenario is provided below:

- Residential
    - Chilton Mixed Use Development: 1050 dwellings (accessed via Aubrey Drive)
    - East of Sudbury: 500 dwellings (accessed via A134 Newton Road)
- Employment
    - Chilton Mixed Use Development [CP01(b)]: 65,722sqm (accessed via A134 Springlands Way)
    - Chilton Mixed Use Development [CP01(c)]: 23,378sqm (accessed via B1115 Waldingfield Road)
    - County Farm (East): 25,690sqm (accessed via Church Field Road)

In addition to these primary land uses, additional education, retail and community facilities have been assumed to be provided as part of the Chilton mixed use development, given the scale of anticipated development in this area and consistent with the emerging Chilton Woods masterplan. When calculating the trip generation of this growth area however, only the trips directly associated with the residential and employment land uses have been considered. The other three land uses are considered to be, to a certain extent, ancillary to the development and intended to primarily service local needs. As such, no direct trip generation analysis has been conducted for these three uses, however an allowance has been made for the provision of these facilities when considering the local containment of residential and employment trips on the site. It has similarly been assumed for the East of Sudbury site that a small level of complimentary facilities will be provided as part of the development, although this has yet to be confirmed.

At this stage, this is still intended as a high level analysis to identify the broad impact of future growth in Sudbury. In particular the access arrangements assumed for the Chilton mixed use development would need to be agreed with the relevant authorities through the planning process. A single point of vehicular access for the residential development as identified in the emerging Chilton Woods masterplan is not consistent with the relevant Local Plan Policies but does provide a more onerous scenario in traffic concentration terms for consideration in this study. It would be expected that detailed Transport Assessment will be required in support of future planning applications based on more detailed proposals for the relevant sites.

C1.4 General Methodology

A two stage approach has been taken to calculate the trip generation of the growth areas and to identify the potential impact on the wider highway network:

- Base Trip Generation – Trip generation associated with each of the individual land uses assuming these were stand alone sites without the provision of complimentary facilities or as part of a mixed land use development. This is based on all trips generated having an origin or departure point beyond the relevant site boundary and making no allowance for future sustainable transport improvements or measures.
- External Trip Generation – This takes into account the potential for the local containment of trips, where trips both start and end within the site boundary as a result of the mix of land uses and facilities provided within the growth area.

For the purposes of this study, the peak hour trip impacts of the residential and employment growth have been assessed. The trip rate and generation calculations have been considered initially by land use and then by growth area where relevant.

C2 Base Trip Generation

C2.1 Overview

The TRICS database has been consulted to identify suitable peak period trip rates for the residential and employment developments associated with each of the growth areas. The most recent version of TRICS at the time of the study (TRICS Version 2011(b) v6.8.1) has been interrogated to identify comparable sites to those proposed. This section sets out the relevant site selection criteria and the subsequent trip generation of each aspect of the growth areas.

C2.2 Chilton Growth Area Residential Trip Rates

Although a small number of flats may be provided, it is understood that this could be a predominately housing-based residential development with up to 35% affordable housing. Trip rates have been obtained from the 'Houses Privately Owned' and 'Houses Rented' sub land use categories to reflect the standard and affordable housing provisions respectively. In each case, sites were selected based on the following criteria:

- Multi-modal site surveys
- Sites in England but not in Greater London
- Sites not located in the town centre
- Sites surveyed since January 2003
- Sites surveyed on a weekday
- Removal of "Initial" Surveys

This provides a total of 37 sites within the Housing Privately Owned and 5 sites from the Houses Rented sub land use categories. The relevant TRICS outputs are provided at the end of this appendix. The all mode trip rates for each of these housing types have been factored based on a development of 1050 dwellings with up to a 35% affordable element, to provide an overall residential development trip rate. This is provided in Table C1 below.

Table C1 – Chilton Growth Area Residential Development – All Mode Trip Rates (per dwelling)

Type	% of Development		AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
			In	Out	Total	In	Out	Total
Private Housing	65% 683 units	Trip Rate	0.259	0.825	1.084	0.603	0.378	0.981
		Trip Gen	177	563	740	412	258	670
Affordable Housing	35% 367 units	Trip Rate	0.196	0.658	0.854	0.495	0.406	0.901
		Trip Gen	72	241	313	182	149	331
Combined Housing	***100% 1050 units***	***Trip Rate***	***0.237***	***0.767***	***1.004***	***0.565***	***0.388***	***0.953***
		Trip Gen	***249***	***805***	***1054***	***594***	***407***	***1001***

In order to identify the potential mode share of residential trips, travel to work data from the 2001 Census has been analysed. The mode shares of journeys to work for residents living in the Sudbury North ward have been obtained and used to factor the total trip rates by mode. This information is provided in Table C2 below.

Table C2 – Chilton Growth Area Residential Development – Multi-Modal Trip Rates (per dwelling)

Mode	Mode Share*	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
		In	Out	Total	In	Out	Total
Walk	20.7%	0.049	0.159	0.208	0.117	0.080	0.197
Bicycle	3.5%	0.008	0.027	0.035	0.020	0.014	0.033
Car/van driver	62.2%	0.147	0.477	0.624	0.352	0.241	0.593
Car/van passenger	8.1%	0.019	0.062	0.081	0.046	0.031	0.077
Motorcycle	0.8%	0.002	0.006	0.008	0.005	0.003	0.008
Bus	2.4%	0.006	0.018	0.024	0.014	0.009	0.023
Rail	1.7%	0.004	0.013	0.017	0.010	0.007	0.016
Other public	0.6%	0.001	0.005	0.006	0.003	0.002	0.006
All modes	***100.0%***	***0.237***	***0.767***	***1.004***	***0.565***	***0.388***	***0.953***

** Mode share adjusted to remove % of people working from home*

The base trip generation and mode split of the residential element of the development based on these trip rates is set out in Table C3 below.

Table C3 – Chilton Growth Area Residential Development – Multi-Modal Base Trip Generation

Mode	Mode Share	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
		In	Out	Total	In	Out	Total
Walk	20.7%	52	167	219	123	84	207
Bicycle	3.5%	9	28	37	21	14	35
Car/van driver	62.2%	155	501	656	369	253	622
Car/van passenger	8.1%	20	65	85	48	33	81
Motorcycle	0.8%	2	6	8	5	3	8
Bus	2.4%	6	19	25	14	10	24
Rail	1.7%	4	14	18	10	7	17
Other public	0.6%	1	5	6	4	2	6
All modes	***100.0%***	***249***	***805***	***1054***	***594***	***406***	***1000***

C2.3 East of Sudbury Residential Trip Rates

For the purposes of the base trip rates, it has been assumed that the all mode trip rates identified for the Chilton mixed-use development will also be representative of the East of Sudbury growth area. Again it is assumed that the development will include up to 35% affordable housing, providing 325 private and 175 affordable dwellings out of a total of 500 units. Table C4 below identifies the individual trip generations associated with each type of housing and the overall trip rate for the growth area.

Table C4 – East of Sudbury Residential Development – All Mode Trip Rates (per dwelling)

Type	% of Development		AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
			In	Out	Total	In	Out	Total
Private Housing	65% 325 units	Trip Rate	0.259	0.825	1.084	0.603	0.378	0.981
		Trip Gen	84	268	352	196	123	319
Affordable Housing	35% 175 units	Trip Rate	0.196	0.658	0.854	0.495	0.406	0.901
		Trip Gen	34	115	149	87	71	158
Combined Housing	***100% 500 units***	***Trip Rate***	***0.237***	***0.767***	***1.004***	***0.565***	***0.388***	***0.953***
		Trip Gen	***118***	***383***	***501***	***282***	***194***	***476***

In order to identify the potential mode share of residential trips, travel to work data from the 2001 Census has been analysed. The mode shares of journeys to work for residents living in the Great Cornard North ward have been obtained and used to factor the total trip rates by mode. This information is provided in Table C5 below.

Table C5 – East of Sudbury Residential Development – Multi-Modal Trip Rates (per dwelling)

Mode	Mode Share*	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
		In	Out	Total	In	Out	Total
Walk	16.5%	0.039	0.127	0.166	0.093	0.064	0.158
Bicycle	4.3%	0.010	0.033	0.043	0.024	0.017	0.041
Car/van driver	62.7%	0.149	0.481	0.630	0.355	0.243	0.598
Car/van passenger	9.6%	0.023	0.074	0.097	0.055	0.037	0.092
Motorcycle	0.9%	0.002	0.007	0.009	0.005	0.003	0.009
Bus	3.7%	0.009	0.028	0.037	0.021	0.014	0.035
Rail	0.7%	0.002	0.006	0.007	0.004	0.003	0.007
Other public	1.5%	0.004	0.011	0.015	0.008	0.006	0.014
All modes	***100.0%***	***0.237***	***0.767***	***1.004***	***0.565***	***0.388***	***0.953***

** Mode share adjusted to remove % of people working from home*

The base trip generation and mode split of the residential element of the development based on these trip rates is set out in Table C6 below.

Table C6 – East of Sudbury Residential Development – Multi-Modal Base Trip Generation

Mode	Mode Share	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
		In	Out	Total	In	Out	Total
Walk	16.5%	20	63	83	47	32	79
Bicycle	4.3%	5	17	22	12	8	20
Car/van driver	62.7%	74	240	314	177	122	299
Car/van passenger	9.6%	11	37	48	27	19	46
Motorcycle	0.9%	1	3	4	3	2	5
Bus	3.7%	4	14	18	10	7	17
Rail	0.7%	1	3	4	2	1	3
Other public	1.5%	2	6	8	4	3	7
All modes	***100.0%***	***118***	***383***	***501***	***282***	***194***	***476***

C2.4 Chilton Growth Area Employment Trip Rates

The emerging masterplan identifies a mix of B1(a) Office, B1(c) / B2 Industry and B8 Warehousing Uses. As such TRICS has been interrogated to identify all mode trip rates for each of these uses. Relevant TRICS outputs are provided at the end of this appendix.

For B1 use, the office sub-land use category was used and sites selected based on the following initial criteria:

- Multi-modal site surveys
- Sites in England but not in Greater London
- Sites not located in the town centre
- Sites surveyed since January 2003
- Removal of "Initial" Surveys

Following a review of the sites which met these criteria, one site – Government Offices in Newcastle – was found to be significantly larger than the entire level of B1(a) use proposed (70,291sqm compared to 26,730sqm). Given the potential for economies of scale benefits associated with the trip generation of larger employment sites, it was considered that this was not representative and therefore has not been included within the site selection. On the other hand, while the size of individual units is not known at this stage, the potential to provide larger units on the site is acknowledged and as such an allowance for this has been made, with surveys for developments with a floor area of less than 2,500sqm excluded.

The average total trip rates per 100sqm of the remaining sites are set out in Table C7 below.

Table C7 – Employment B1 Development – All Mode Trip Rates (trips per 100sqm)

Land Use	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	In	Out	Total	In	Out	Total
B1 Office	2.278	0.195	2.473	0.150	1.889	2.039

For the industrial use, identified as either B1(c) or B2 in the Chilton Woods Access Strategy, the Industrial Estate sub-land use category was used and sites selected based on the following initial criteria:

- Multi-modal site surveys
- Sites in England but not in Greater London
- Sites not located in the town centre
- Sites surveyed since January 2003
- Removal of "Initial" Surveys
- Removal of sites where the total of non B1(c) or B2 content was greater than 50%.

Of the surveys which met these criteria, one site, an Industrial Estate of some 102,000sqm in Ipswich, was discounted due to its size. The average total trip rates per 100sqm based on the remaining sites are set out in Table C8 below.

Table C8 – Employment B1(c) / B2 Development – All Mode Trip Rates (trips per 100sqm)

Land Use	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	In	Out	Total	In	Out	Total
B1(c) / B2 uses	0.698	0.322	1.020	0.198	0.520	0.718

A similar exercise was also carried out for B8 land use, based on the warehousing (commercial) sub-category, with the following initial selection criteria:

- Multi-modal site surveys
- Sites in England but not in Greater London
- Sites not located in the town centre
- Sites surveyed since January 2003
- Removal of "Initial" Surveys

This provided only two sites, one of which, an Argos Warehouse in Darlington, was not considered suitable for use given that its gross floor area of approximately 80,000sqm is significantly in excess of the B8 development being considered.

Given that this limited the selection to one site, the selection criteria were relaxed to include all survey types and surveys undertaken since January 2001. As this would provide a vehicular trip rate, rather than one for all modes, the site selection was adjusted to exclude any site with public transport provision above 80 services per day, and which would be significantly in excess of the current provision in the Chilton area.

Of the 10 sites which met these adjusted criteria, 3 were excluded given their size (each in excess of 50,000sqm) and following a review of the survey information, the distribution centre at Worcester was also excluded due to the extreme nature of its trip rates in relation to the other sites. Table C9 below sets out the average trip rates obtained for the six remaining surveys.

Table C9 – Employment B8 Development – Vehicular Trip Rates (trips per 100sqm)

Land Use	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	In	Out	Total	In	Out	Total
B8 Warehouse	0.128	0.059	0.187	0.094	0.130	0.224

As with the residential land use, the travel to work data from the 2001 Census has been analysed to obtain employment journey mode splits. This has been based on journeys to work ending in the Sudbury North Ward. Table C10 identifies the multi-modal trip rates for each of the employment land uses given these mode shares. While the office and industrial uses have been calculated directly from the all mode trip rates, the warehousing mode splits have been calculated based on the vehicular trip rate. The overall employment base trip generation and mode splits based on these trip rates and the development quantum identified in Table C1 is provided in Table C11.

Table C10 – Chilton Growth Area Employment Development – Multi-Modal Trip Rates (per 100sqm)

Mode	Mode Share*	B1 - Office						B1(c) / B2 - Industry						B8 - Warehouse					
		AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak		
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Walk	17.5%	0.398	0.034	0.433	0.026	0.330	0.357	0.122	0.056	0.178	0.035	0.091	0.126	0.032	0.015	0.047	0.024	0.033	0.056
Bicycle	2.4%	0.055	0.005	0.060	0.004	0.046	0.049	0.017	0.008	0.025	0.005	0.013	0.017	0.004	0.002	0.007	0.003	0.005	0.008
Car/van driver	69.7%	1.587	0.136	1.723	0.104	1.316	1.420	0.486	0.224	0.711	0.138	0.362	0.500	0.128	0.059	0.187	0.094	0.130	0.224
Car/van passenger	7.1%	0.161	0.014	0.175	0.011	0.134	0.144	0.049	0.023	0.072	0.014	0.037	0.051	0.013	0.006	0.019	0.010	0.013	0.023
Motorcycle	0.6%	0.014	0.001	0.015	0.001	0.011	0.012	0.004	0.002	0.006	0.001	0.003	0.004	0.001	0.001	0.002	0.001	0.001	0.002
Bus	1.2%	0.028	0.002	0.030	0.002	0.023	0.025	0.008	0.004	0.012	0.002	0.006	0.009	0.002	0.001	0.003	0.002	0.002	0.004
Rail	0.6%	0.014	0.001	0.015	0.001	0.011	0.012	0.004	0.002	0.006	0.001	0.003	0.004	0.001	0.001	0.002	0.001	0.001	0.002
Other	0.9%	0.021	0.002	0.023	0.001	0.017	0.019	0.006	0.003	0.009	0.002	0.005	0.007	0.002	0.001	0.002	0.001	0.002	0.003
All modes	***100.0%***	***2.278***	***0.195***	***2.473***	***0.150***	***1.889***	***2.039***	***0.698***	***0.322***	***1.020***	***0.198***	***0.520***	***0.718***	***0.184***	***0.085***	***0.268***	***0.135***	***0.187***	***0.322***

** Mode share adjusted to remove % of people working from home*

Table C11 – Chilton Growth Area Employment Development – Multi-Modal Base Trip Generation

Mode	Mode Share	Total					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	17.5%	159	33	192	26	129	155
Bicycle	2.4%	22	5	27	4	18	22
Car/van driver	69.7%	632	132	764	102	516	618
Car/van passenger	7.1%	64	13	77	10	52	62
Motorcycle	0.6%	6	1	7	1	4	5
Bus	1.2%	11	2	13	2	9	11
Rail	0.6%	6	1	7	1	4	5
Other	0.9%	8	2	10	1	7	8
All modes	***100.0%***	***908***	***189***	***1097***	***147***	***739***	***886***

C2.5 County Farm (East) Employment Trip Rates

As part of the Transport Assessment (TA) submitted in support of the County Farm East planning application, analysis was carried out to identify the potential trip generation of the site proposals. The site is proposed to accommodate mostly warehousing with some B1 space in the form of standard office provision and a call centre. Vehicular trip rates for each of these uses were obtained from TRICS, however the selection criteria for appropriate sites is not recorded within the assessment. Table C12 below sets out the trip rates identified in the Transport Assessment.

Table C12 – County Farm (East) Transport Assessment - Vehicular Trip Rates

Land Use	AM Peak (0800 – 0900)			PM Peak (1700 – 1800)		
	In	Out	Total	In	Out	Total
B1 Office	1.678	0.244	1.922	0.234	1.537	1.791
B1 Call Centre	3.000	0.333	3.333	0.792	1.708	2.500
B8 Warehousing	0.177	0.104	0.281	0.170	0.188	0.358

As can be seen, the B1 office and B8 trip rates are generally higher than those that have been identified as part of the analysis for this study. This may reflect the use of older sites, as well as the number of council office and superstore distribution centres within the sites selected for the County Farm (East) TA which generally appear to have greater relative trip rates.

To provide a robust assessment of the potential trip generation of this development for the purposes of this study, the trip generation identified in the County Farm (East) TA has been used. In order to identify the overall trip generation of the development, the vehicular trip generation has been factored against mode share data obtained for the Sudbury East ward from the 2001 Census Journey to Work data. The multi-mode trip generation of the site is set out in Table C13 below.

Table C13 - County Farm (East) Multi-Modal Base Trip Generation

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	14.2%	21	7	28	11	18	29
Bicycle	5.0%	7	2	10	4	6	10
Car/van driver	67.7%	100	32	132	52	85	137
Car/van passenger	8.1%	12	4	16	6	10	16
Motorcycle	1.0%	2	0	2	1	1	2
Bus	2.6%	4	1	5	2	3	5
Rail	0.5%	1	0	1	0	1	1
Other	0.8%	1	0	2	1	1	2
All modes	100.0%	***148***	***47***	***195***	***77***	***125***	***202***

C3 Local Containment and External Trip Generation

C3.1 Overview

Principally in relation to the Chilton development and to a lesser extent the East of Sudbury residential site, it is anticipated that given the mix of land uses a number of trips that would otherwise be generated by the individual land uses would take place wholly within a growth area, reducing the number of external trips associated with the development. The emerging Chilton Woods masterplan identifies residential, employment, retail, education and community uses. It is anticipated that there is significant scope for the local containment of a proportion of these trips within the site, particularly for residents, who will have a primary school, shopping facilities and potentially a place to work located within the site. For the East of Sudbury site, at this stage it is assumed that the opportunity for the containment of trips will be restricted to potentially shopping and "other" journey purposes.

C3.2 External Chilton Growth Area Residential Trips

The extent of internal movements would be expected to vary by trip purpose. Table NTS0502 from the 2009 National Travel Survey identifies the proportion of trips by journey purpose during the peak periods. This is reproduced in a simplified form in Table C14 below, with Table C15 identifying the subsequent all mode trip rates by purpose.

Table C14 – Peak Period Trips by Journey Purpose

Start time	Work	Education	Shopping	Other	Total
0800 - 0859	28%	47%	4%	21%	100%
1700 - 1759	38%	4%	12%	46%	100%

Source: National Travel Survey 2009

Table C15 – Chilton Growth Area Residential Development – All Mode Base Trip Rates by Journey Purpose

Purpose	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Work	0.066	0.213	0.279	0.216	0.148	0.365
Education	0.112	0.361	0.472	0.020	0.014	0.034
Shopping	0.011	0.034	0.045	0.069	0.047	0.116
Other	0.044	0.143	0.187	0.234	0.160	0.394
Total	***0.237***	***0.767***	***1.004***	***0.565***	***0.388***	***0.953***

In order to identify the scope for people to remain on the site, travel to work statistics from the 2001 Census have been analysed to identify the number of people who both live and work within the Sudbury North Ward. Excluding people who work from home, who would not have been identified within the trip rates obtained from TRICS, just under 15% of residents travelling to work remain within the ward. Assumptions have been made relating to the proportion of trips relating to other purposes that would be anticipated to be contained within the site, reflecting the relevant level of provision currently being proposed. These are summarised in Table C16 below.

Table C16 – Chilton Growth Area - Proportion of Internal Residential Trips by Purpose

Purpose	% of Trips Remaining Internal to Site
Work	14.8%
Education	50%
Shopping	20%
Other	10%

Table C17 shows the external all mode trip rates by purpose for the residential development having taken into account these internalisation factors, with Table C18 identifying the subsequent overall external trip rates by mode. These trip rates are intended to reflect the mixed use nature of the scheme and would not be applicable in the event that residential units were developed in isolation. Table C19 identifies the external trip generation and mode share based on the development of the full 1050 dwellings.

Table C17 – Chilton Growth Area Residential Development – All Mode External Trip Rates by Journey Purpose

Purpose	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Work	0.056	0.181	0.237	0.184	0.126	0.311
Education	0.056	0.180	0.236	0.010	0.007	0.017
Shopping	0.008	0.027	0.036	0.055	0.038	0.093
Other	0.044	0.143	0.187	0.234	0.160	0.394
Total	***0.164***	***0.532***	***0.696***	***0.483***	***0.332***	***0.815***

Table C18 – Chilton Growth Area Residential Development – Multi-Modal External Trip Rates (per dwelling)

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	0.034	0.110	0.144	0.100	0.069	0.169
Bicycle	0.006	0.019	0.024	0.017	0.012	0.029
Car/van driver	0.102	0.331	0.433	0.301	0.206	0.507
Car/van passenger	0.013	0.043	0.056	0.039	0.027	0.066
Motorcycle	0.001	0.004	0.006	0.004	0.003	0.007
Bus	0.004	0.013	0.017	0.012	0.008	0.020
Rail	0.003	0.009	0.012	0.008	0.006	0.014
Other public	0.001	0.003	0.004	0.003	0.002	0.005
All modes	***0.164***	***0.532***	***0.696***	***0.483***	***0.332***	***0.815***

Table C19 – Chilton Growth Area Residential Development – Multi-Modal External Trip Generation

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	20.7%	36	116	152	105	72	177
Bicycle	3.5%	6	20	26	18	12	30
Car/van driver	62.2%	107	347	454	316	217	533
Car/van passenger	8.1%	14	45	59	41	28	69
Motorcycle	0.8%	1	4	5	4	3	7
Bus	2.4%	4	13	17	12	8	20
Rail	1.7%	3	9	12	9	6	15
Other public	0.6%	1	3	4	3	2	5
All modes	***100.0%***	***172***	***557***	***729***	***508***	***348***	***856***

C3.3 External East of Sudbury Residential Trips

As identified above, it is anticipated that the extent of local containment will be more limited on the East of Sudbury site, and for the purposes of this study it has been assumed that this will be limited to shopping and "other" trip purposes.

Table C20 – Proportion of Contained East of Sudbury Residential Trips by Purpose

Purpose	% of Trips Contained Within the Site
Work	-
Education	-
Shopping	10%
Other	10%

Based on the same journey purpose splits and subsequent base all mode trip rates identified for the Chilton site in Tables C14 and C15, Table C21 shows the external all mode trip rates for the residential development having taken into account these local containment factors. The subsequent overall trip rates by mode are set out in Table C22. These trip rates are intended to reflect the mixed use nature of the scheme and would not be applicable in the event that residential units were developed in isolation. Table C23 identifies the external trip generation and mode share based on the development of 500 dwellings.

Table C21 – East of Sudbury Residential Development – All Mode External Trip Rates by Journey Purpose

Purpose	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Work	0.066	0.213	0.279	0.216	0.148	0.365
Education	0.112	0.361	0.472	0.020	0.014	0.034
Shopping	0.009	0.031	0.040	0.062	0.043	0.105
Other	0.044	0.143	0.187	0.234	0.160	0.394
Total	***0.231***	***0.747***	***0.978***	***0.532***	***0.365***	***0.898***

Table C22 – East of Sudbury Residential Development – Multi-Modal External Trip Rates (per dwelling)

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	0.038	0.124	0.162	0.088	0.060	0.148
Bicycle	0.010	0.032	0.042	0.023	0.016	0.039
Car/van driver	0.145	0.469	0.614	0.334	0.229	0.563
Car/van passenger	0.022	0.072	0.094	0.051	0.035	0.087
Motorcycle	0.002	0.007	0.009	0.005	0.003	0.008
Bus	0.008	0.027	0.036	0.019	0.013	0.033
Rail	0.002	0.005	0.007	0.004	0.003	0.006
Other public	0.003	0.011	0.015	0.008	0.005	0.013
All modes	***0.231***	***0.747***	***0.978***	***0.532***	***0.365***	***0.898***

Table C23 – East of Sudbury Residential Development – Multi-Modal External Trip Generation

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	16.5%	19	62	81	44	30	74
Bicycle	4.3%	5	16	21	11	8	19
Car/van driver	62.7%	72	234	306	167	115	282
Car/van passenger	9.6%	11	36	47	26	18	44
Motorcycle	0.9%	1	3	4	2	2	4
Bus	3.7%	4	14	18	10	7	17
Rail	0.7%	1	3	4	2	1	3
Other public	1.5%	2	6	8	4	3	7
All modes	***100.0%***	***115***	***374***	***489***	***266***	***184***	***450***

C3.4 External Employment Trips

While there is significant potential for the local containment of trips related to residential movements, it is anticipated that this will be more limited for the employment trip generation. Although the provision of local shopping facilities will be of benefit to this, it is considered that this will have a greater impact on off-peak movements, in particular around lunchtime, than during the traditional peak hours. As such, for the Chilton development contained employment trips are assumed to be limited to journeys to work made by people also living on the site while there will not be any containment of trips at the County Farm (East) site. The number of these Chilton trips should reflect the contained journey to work trips identified for residential uses (some 43 trips in the AM peak and 57 trips in the PM peak across all modes).

Table C24 identifies the average employment external trip rates applicable to the Chilton area given this adjustment and Table C25 the relevant trip generation associated with these rates. These trip rates again assume that the residential element of the Chilton development comes forward in conjunction with the employment development.

It should be highlighted that should the mix of employment uses be altered significantly, the applicable trip rates would require adjustment. In terms of understanding the broad impacts of the proposed growth in this area and the impacts of the current Transport Study, the average rates identified are appropriate.

Table C24 – Chilton Growth Area Employment Development – Multi-Modal External Trip Rates

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	0.176	0.030	0.205	0.021	0.140	0.161
Bicycle	0.024	0.004	0.028	0.003	0.019	0.022
Car/van driver	0.702	0.125	0.827	0.091	0.563	0.654
Car/van passenger	0.071	0.012	0.083	0.009	0.057	0.065
Motorcycle	0.006	0.001	0.007	0.001	0.005	0.006
Bus	0.012	0.002	0.014	0.001	0.009	0.011
Rail	0.006	0.001	0.007	0.000	0.005	0.005
Other	0.009	0.002	0.011	0.001	0.007	0.009
All modes	***1.006***	***0.176***	***1.182***	***0.127***	***0.805***	***0.932***

Table C25 – Chilton Growth Area Employment Development – Multi-Modal External Trip Generation

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	17.5%	157	26	183	19	125	143
Bicycle	2.4%	22	3	25	2	17	20
Car/van driver	69.7%	626	111	737	81	502	583
Car/van passenger	7.1%	63	11	74	8	50	58
Motorcycle	0.6%	5	1	6	1	4	5
Bus	1.2%	11	2	12	1	8	9
Rail	0.6%	5	1	6	0	4	4
Other	0.9%	8	2	10	1	7	8
All modes	***100.0%***	***897***	***156***	***1053***	***113***	***717***	***830***

C3.5 External Combined Development Trips

Table C26 below identifies the overall number of external vehicle trips associated with the combined growth areas, based upon the assumptions set above and given the Main Test quantum of development.

Table C26 – Combined Growth Trip Generation (Car Driver)

Location	Size	AM Peak			PM Peak		
		Arrivals	Departures	Total	Arrivals	Departures	Total
Residential	1550 units	179	581	760	483	332	815
Employment	114,790sqm GFA	726	143	869	133	587	720
Total	***-***	***905***	***724***	***1629***	***616***	***919***	***1535***

C4 Trip Distribution and Assignment

C4.1 Methodology

The distribution and subsequent assignment of these trips to the highway network has been based upon the Journey to Work data from the 2001 census. Information has been obtained for car driver trips' origins / destinations for each of the wards pertaining to the individual growth areas. For employment trips, this involves trips to the relevant ward, while for residential trips have been based on journeys originating in that ward.

A broad assignment pattern has been used, with traffic either assigned to 1 of 6 key corridors into / out of Sudbury or to the Town Centre. For the purposes of this strategic study, trips to the Sudbury South ward are identified as travelling to / from the Town Centre gyratory. For trips to / from the other wards in Sudbury, a main highway corridor has been identified and it is assumed that trips will start / end from a sink off each of these. Table C27 below identifies the distribution and the relevant corridors of trips for each of the growth areas.

Table C27 – Trip Generation Distribution

	Growth Area	Chilton Growth Area		County Farm East	East of Sudbury
	Ward	Sudbury North		Sudbury East	Gt Cornard North
Direction	**Corridor**	***Res***	***Emp***	***Emp***	***Res***
North	A134 Towards Bury St Edmunds	20%	21%	18%	14%
North East	B1115 - Waldingfield Rd	9%	12%	12%	7%
East	A134 Towards Hadleigh, Ipswich and Colchester	14%	12%	17%	14%
South East	B1508 Towards Colchester	1%	2%	1%	1%
South	A131 Towards Halstead and Braintree	14%	10%	11%	11%
Sudbury North	Various	13%	20%	7%	4%
Sudbury South	Town Centre Gyratory	13%	6%	5%	18%
Sudbury East	Various	14%	4%	10%	18%
Great Cornard	Shawlands Avenue	3%	13%	19%	13%
Total	**-**	***100%***	***100%***	***100%***	***100%***

The assignment of trips for each of these growth areas is set out in Tables C28 – C32 below. A detailed assignment of trips has been identified for County Farm East within the relevant Transport Assessment, with some trips accessing Church Field Road via Milner Road and movements based on existing turning proportions. To maintain consistency with the strategic nature of this study, for this analysis it has been assumed that all traffic will access Church Field Road via Waldingfield Road and will be assigned consistent with the distribution identified in Table C32. These assignments have been used for the purposes of the flow diagrams shown in Figures 4.2 – 4.7 of the main report.

Table C28 – Chilton Growth Area Residential Route Assignment Assumptions

Direction	Route Assumption
North	Aubrey Drive Access to B1115 Waldingfield Road to A134 Springlands Way to A134 north
North East	Aubrey Drive Access to B1115 Waldingfield Road north
East	Aubrey Drive Access to B1115 Waldingfield Road to A134 Northern Road to A131 Newton Road east
South East	Aubrey Drive Access to B1115 Waldingfield Road to Gyratory to B1508 south-east
South	Aubrey Drive Access to B1115 Waldingfield Road to Gyratory to A131 south
Sudbury North	50% - Aubrey Drive Access to A134 Springlands Way 50% - Aubrey Drive Access to B1115 Waldingfield Road south
Sudbury South	Aubrey Drive Access to B1115 Waldingfield Road to Gyratory
Sudbury East	50% - Aubrey Drive Access to A134 Northern Road 50% - Aubrey Drive Access to B1115 Waldingfield Road south
Great Cornard	Aubrey Drive Access to A134 Northern Road to Shawlands Avenue

Table C29 – East of Sudbury Residential Route Assignment Assumptions

Direction	Route Assumption
North	Access to A134 Newton Road to A134 Northern Road to A134 Springfield Way to A134 north
North East	Access to A134 Newton Road to A134 Northern Road to B1115 Waldingfield Road north
East	Access to A131 Newton Road east
South East	Access to A134 Newton Road to A131 Newton Road to Gyratory to B1508 south-east
South	Access to A134 Newton Road to A131 Newton Road to Gyratory to A131 south
Sudbury North	50% - Access to A134 Newton Road to A134 Northern Road to A134 Springlands Way 50% - Access to A134 Newton Road to A134 Northern Road to B1115 Waldingfield Road south
Sudbury South	Access to A134 Newton Road to A131 Newton Road to Gyratory
Sudbury East	50% - Access to A134 Newton Road to A134 Northern Road 50% - Access to A134 Newton Road to A131 Newton Road
Great Cornard	Access to A134 Newton Road to Shawlands Avenue

Table C30 – Chilton Growth Area C01b) Employment Route Assignment Assumptions

Direction	Route Assumption
North	A134 Access to A134 Springlands Way to A134 north
North East	A134 Access to A134 Springlands Way to B1115 Waldingfield Road north
East	A134 Access to A134 Springlands Way to A134 Northern Road to A131 Newton Road east
South East	50% - A134 Access to A134 Springlands Way to B1115 Waldingfield Road to Gyratory to B1508 south-east 50% - A134 Access to A134 Springlands Way to A131 Melford Road to B1508 south-east
South	50% - A134 Access to A134 Springlands Way to B1115 Waldingfield Road to Gyratory to A131 south 50% - A134 Access to A134 Springlands Way to A131 Melford Road to Gyratory to A131 south
Sudbury North	50% - A134 Access to A134 Springlands Way east 50% - A134 Access to A134 Springlands Way to A131 Melford Road south
Sudbury South	50% - A134 Access to A134 Springlands Way to B1115 Waldingfield Road to Gyratory 50% - A134 Access to A134 Springlands Way to A131 Melford Road to Gyratory
Sudbury East	50% - A134 Access to A134 Springlands Way to A134 Northern Road 50% - A134 Access to A134 Springlands Way to B1115 Waldingfield Road south
Great Cornard	A134 Access to A134 Springlands Way to A134 Northern Road to Shawlands Avenue

Table C31 – Chilton Growth Area C01c) Employment Route Assignment Assumptions

Direction	Route Assumption
North	Access to B1115 Waldingfield Road to A134 Springlands Way to A134 north
North East	Access to B1115 Waldingfield Road north
East	Access to B1115 Waldingfield Road to A134 Northern Road to A131 Newton Road east
South East	Access to B1115 Waldingfield Road to Gyratory to B1508 south-east
South	Access to B1115 Waldingfield Road to Gyratory to A131 south
Sudbury North	50% - Access to A134 Springlands Way 50% - Access to B1115 Waldingfield Road south
Sudbury South	Access to B1115 Waldingfield Road to Gyratory
Sudbury East	50% - Access to A134 Northern Road 50% - Access to B1115 Waldingfield Road south
Great Cornard	Access to A134 Northern Road to Shawlands Avenue

Table C32 – County Farm East Employment Route Assignment Assumptions

Direction	Route Assumption
North	Church Field Road to B1115 Waldingfield Road to A134 Springlands Way to A134 north
North East	Church Field Road to B1115 Waldingfield Road north
East	Church Field Road to B1115 Waldingfield Road to A134 Northern Road to A131 Newton Road east
South East	Church Field Road to B1115 Waldingfield Road to Gyratory to B1508 south-east
South	Church Field Road to B1115 Waldingfield Road to Gyratory to A131 south
Sudbury North	50% - Church Field Road to A134 Springlands Way 50% - Church Field Road to B1115 Waldingfield Road south
Sudbury South	Church Field Road to B1115 Waldingfield Road to Gyratory
Sudbury East	50% - Church Field Road to A134 Northern Road 50% - Church Field Road to B1115 Waldingfield Road south
Great Cornard	Church Field Road to A134 Northern Road to Shawlands Avenue

Residential Trip Generation

Private Housing Site Selection

Reference	Description	Area	Location	SITE AREA	DWELLS	DENSITY	TOTBED	Survey Type	Most Recent Survey	Status	Travel Plan	SAM
AN-03-A-01	SEMI-DETACHED, BELFAST	ANTRIM	Suburban Area (PPS6 Out of Centre)	15	370			VEHICLES	23/02/1995	One-Off		
AN-03-A-02	SEMI DETACHED, BELFAST	ANTRIM	Edge of Town	12.7	370			MULTI-MODAL	14/11/2002	One-Off		
AN-03-A-03	SEMI DETACHED, LISBURN	ANTRIM	Edge of Town	3.7	86			MULTI-MODAL	14/11/2002	One-Off		
AN-03-A-04	DETACHED/SEMI DET., ANTRIM	ANTRIM	Edge of Town	7.8	164			VEHICLES	03/10/2003	One-Off		
AN-03-A-05	DETACHED/SEMI DET., LISBURN	ANTRIM	Edge of Town	15.6	358			VEHICLES	03/10/2003	One-Off		
AN-03-A-06	SEMI-DET., NEWTOWNABBEY	ANTRIM	Suburban Area (PPS6 Out of Centre)	3.15	132	41.9	375	MULTI-MODAL	10/06/2010	One-Off		
AR-03-A-01	MIXED HOUSES, LURGAN	ARMAGH	Edge of Town	4.04	153	37.87	482	MULTI-MODAL	15/06/2010	One-Off		
AS-03-A-01	DETACHED/SEMI D., PORTLETHEN	ABERDEENSHIRE	Edge of Town	4.7	104			VEHICLES	11/02/2000	One-Off		
BD-03-A-01	SEMI DETACHED, LUTON	BEDFORDSHIRE	Suburban Area (PPS6 Out of Centre)	5.2	131	30.47		MULTI-MODAL	08/07/2004	One-Off		
BD-03-A-02	SEMI DETACHED, LUTON	BEDFORDSHIRE	Suburban Area (PPS6 Out of Centre)	3.4	82	27.33		MULTI-MODAL	06/07/2004	One-Off		
BN-03-A-01	SEMI DETACHED, COCKFOSTERS	BARNET	Suburban Area (PPS6 Out of Centre)	0.45	10	23.47	30	MULTI-MODAL	20/10/2005	One-Off		
BT-03-A-01	SEMI DETATCHED, BRENT	BRENT	Suburban Area (PPS6 Out of Centre)	4.42	82	18.55	180	MULTI-MODAL	20/11/2007	One-Off		
CA-03-A-01	SEMI D./TERRACED, CAMBRIDGE	CAMBRIDGESHIRE	Edge of Town	5	124			MULTI-MODAL	06/02/2001	One-Off		
CA-03-A-02	MIXED HOUSES, PETERBOROUGH	CAMBRIDGESHIRE	Edge of Town Centre	11.25	363	38.21		MULTI-MODAL	13/05/2004	One-Off		
CA-03-A-03	SEMI-DET., PETERBOROUGH	CAMBRIDGESHIRE	Suburban Area (PPS6 Out of Centre)	1.2	28	25.93	95	MULTI-MODAL	11/05/2008	One-Off		
CB-03-A-01	SEMI DETACHED, KENDAL	CUMBRIA	Edge of Town	11.6	385			VEHICLES	25/09/1990	One-Off		
CB-03-A-02	SEMI DETACHED, WORKINGTON	CUMBRIA	Edge of Town	1.8	40	25	120	MULTI-MODAL	20/06/2005	Initial Survey		
CB-03-A-03	SEMI DETACHED, WORKINGTON	CUMBRIA	Edge of Town	1.8	40	25	120	MULTI-MODAL	20/11/2008	Re-Survey		
CB-03-A-04	SEMI DETACHED, WORKINGTON	CUMBRIA	Edge of Town	2.9	82	35.65	246	MULTI-MODAL	24/04/2009	Re-Survey		
CF-03-A-01	MIXED HOUSES, CARDIFF	CARDIFF	Suburban Area (PPS6 Out of Centre)	15	222			MULTI-MODAL	17/10/2002	One-Off		
CF-03-A-02	MIXED HOUSES, CARDIFF	CARDIFF	Edge of Town	8.1	196	46.67	527	MULTI-MODAL	05/10/2007	One-Off		
CF-03-A-03	DETACHED, CARDIFF	CARDIFF	Suburban Area (PPS6 Out of Centre)	1.5	29	24.17	121	MULTI-MODAL	08/10/2007	One-Off		
CH-03-A-01	HOUSING, NEAR NORTHWICH	CHESHIRE	Neighbourhood Centre (PPS6 Local Centre)	37.3	425			VEHICLES	19/10/1989	One-Off		
CH-03-A-02	HOUSES/FLATS, CREWE	CHESHIRE	Edge of Town	6.42	174	35.8	440	VEHICLES	14/10/2008	One-Off		
CH-03-A-03	SEMI-DETACHED, CREWE	CHESHIRE	Suburban Area (PPS6 Out of Centre)	2.4	80	41.24	230	MULTI-MODAL	19/10/2008	One-Off		
CH-03-A-04	DETACHED/SEMI-DET., CREWE	CHESHIRE	Edge of Town	0.69	25	48.08	75	MULTI-MODAL	19/10/2008	One-Off		
CH-03-A-05	DETACHED, CREWE	CHESHIRE	Edge of Town	0.84	17	23.29	67	MULTI-MODAL	14/10/2008	One-Off		
CH-03-A-06	SEMI-DET./BUNGALOWS,CREWE	CHESHIRE	Suburban Area (PPS6 Out of Centre)	5.32	129	29.72	318	MULTI-MODAL	14/10/2008	One-Off		
CM-03-A-01	DETAT./BG'LOWS,CARMARTHEN	CARMARTHENSHIRE	Edge of Town	1.3	17	14.91	51	MULTI-MODAL	13/09/2008	One-Off		
CP-03-A-01	DETACHED, NEAR CAERPHILLY	CAERPHILLY	Edge of Town	8.9	201			VEHICLES	01/05/1990	One-Off		
CP-03-A-02	SEMI DETACHED, PENGAM	CAERPHILLY	Suburban Area (PPS6 Out of Centre)	0.63	41	65.6		MULTI-MODAL	05/09/2005	One-Off		
CR-03-A-01	BUNGALOWS, CORK	CORK	Suburban Area (PPS6 Out of Centre)	3.4	48	14.12	145	MULTI-MODAL	08/12/2005	One-Off		
CS-03-A-01	TERRACED, SLIGO	SLIGO	Edge of Town Centre	1.55	46	51.11	138	MULTI-MODAL	14/06/2007	One-Off		
CS-03-A-02	DETACHED, SLIGO	SLIGO	Suburban Area (PPS6 Out of Centre)	1.85	35	26.92	157	MULTI-MODAL	14/06/2007	One-Off		
CW-03-A-01	TERRACED, PENZANCE	CORNWALL	Suburban Area (PPS6 Out of Centre)	0.2	13	100	39	MULTI-MODAL	30/06/2005	One-Off		
CW-03-A-02	SEMI D./DETATCHED, TRURO	CORNWALL	Suburban Area (PPS6 Out of Centre)	3.35	73	28.08	222	MULTI-MODAL	18/09/2007	One-Off		
DC-03-A-01	DETACHED, POOLE	DORSET	Suburban Area (PPS6 Out of Centre)	1.84	51	28.98	204	VEHICLES	16/07/2008	One-Off		
DC-03-A-06	DETACHED, NEAR WAREHAM	DORSET	Neighbourhood Centre (PPS6 Local Centre)	7.1	70			VEHICLES	25/04/1991	Initial Survey		
DC-03-A-07	MIXED HOUSES, NEAR POOLE	DORSET	Neighbourhood Centre (PPS6 Local Centre)	7.1	171			VEHICLES	18/04/1996	Re-Survey		
DE-03-A-01	SEMI.D./DETACHED, MAGHERAFLT	DERRY	Edge of Town	4.5	106			VEHICLES	11/11/2002	One-Off		
DE-03-A-02	DETACHED, COLERAINE	DERRY	Neighbourhood Centre (PPS6 Local Centre)	7.9	112			VEHICLES	11/11/2002	One-Off		
DE-03-A-03	BUNGALOWS, LONDONDERRY	DERRY	Suburban Area (PPS6 Out of Centre)	9.9	160			MULTI-MODAL	02/10/2003	One-Off		
DL-03-A-01	SEMI DETACHED, DUBLIN	DUBLIN	Suburban Area (PPS6 Out of Centre)	9.2	208			MULTI-MODAL	22/11/2002	One-Off		
DL-03-A-02	SEMI DETACHED, DUBLIN	DUBLIN	Suburban Area (PPS6 Out of Centre)	13.9	437	47.5	1361	MULTI-MODAL	25/06/2007	One-Off		
DL-03-A-03	TERRACED/SEMI-DET., DUBLIN	DUBLIN	Neighbourhood Centre (PPS6 Local Centre)	5.89	206	39.92	618	MULTI-MODAL	20/04/2010	One-Off		
DL-03-A-05	MIXED HOUSES, DUBLIN	DUBLIN	Suburban Area (PPS6 Out of Centre)	9.92	234	29.29	825	MULTI-MODAL	01/05/2010	One-Off		
DL-03-A-06	DETACHED, DUBLIN	DUBLIN	Edge of Town	9.24	147	18.42	588	MULTI-MODAL	30/04/2010	One-Off		
DN-03-A-01	DETACHED, BALLYBOFEY	DONEGAL	Neighbourhood Centre (PPS6 Local Centre)	0.58	4	17.39	20	MULTI-MODAL	30/06/2010	One-Off		
DO-03-A-01	TERRACED, BANBRIDGE	DOWN	Edge of Town	5.6	161			VEHICLES	20/10/2002	One-Off		
DO-03-A-02	BUNGALOWS, NR BALLYNAHINCH	DOWN	Free Standing (PPS6 Out of Town)	11.1	104			VEHICLES	03/10/2003	One-Off		
DS-03-A-01	SEMI D./TERRACED, DRONFIELD	DERBYSHIRE	Neighbourhood Centre (PPS6 Local Centre)	0.8	20	35.71		MULTI-MODAL	22/06/2006	One-Off		
EA-03-A-01	DETATCHED, KILMARNOCK	EAST AYRSHIRE	Edge of Town	1.8	39	39	156	MULTI-MODAL	05/06/2008	One-Off		
EA-03-A-02	DETATCHED, STEWARTON	EAST AYRSHIRE	Edge of Town	5.4	65	13.27	280	MULTI-MODAL	22/06/2008	One-Off		
EG-03-A-01	HOUSING, EALING COMMON	EALING	Suburban Area (PPS6 Out of Centre)	4.6	95			VEHICLES	09/07/1991	One-Off		
EG-03-A-02	HOUSING, SOUTH GREENFORD	EALING	Neighbourhood Centre (PPS6 Local Centre)	35	1045			VEHICLES	09/06/1991	One-Off		
EG-03-A-03	SEMI DETACHED, GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	0.5	50			VEHICLES	09/01/1992	One-Off		
EG-03-A-04	SEMI D./TERRACED, WEST ACTON	EALING	Suburban Area (PPS6 Out of Centre)	4.7	133			VEHICLES	13/06/1991	One-Off		
ES-03-A-01	MIXED HOUSES/FLATS, LEWES	EAST SUSSEX	Edge of Town	12.7	491			MULTI-MODAL	29/03/2001	One-Off		
EX-03-A-01	SEMI-DET., STANFORD-LE-HOPE	ESSEX	Edge of Town	6.84	237	34.65	717	MULTI-MODAL	13/05/2008	One-Off		
FE-03-A-01	MIXED HOUSES, ENNISKILLEN	FERMANAGH	Edge of Town	7.2	132			VEHICLES	10/11/2002	One-Off		
FI-03-A-01	BUNGALOWS, BALMULLO	FIFE	Neighbourhood Centre (PPS6 Local Centre)	7	118			VEHICLES	24/06/1999	One-Off		
FI-03-A-02	SEMI DETACHED, GLENROTHES	FIFE	Suburban Area (PPS6 Out of Centre)	3.5	58	16.57		MULTI-MODAL	16/05/2005	One-Off		
FI-03-A-03	MIXED HOUSES, DUNFERMLINE	FIFE	Edge of Town	7.5	155	25	447	MULTI-MODAL	30/04/2007	One-Off		
GA-03-A-01	SEMI DETACHED, GALWAY	GALWAY	Edge of Town	5.1	123	36.18	492	MULTI-MODAL	20/09/2006	One-Off		
GA-03-A-02	TERRACED, GALWAY	GALWAY	Suburban Area (PPS6 Out of Centre)	7	185	31.36	393	MULTI-MODAL	19/09/2006	One-Off		
GA-03-A-03	SEMI DET./TERRACED, GALWAY	GALWAY	Suburban Area (PPS6 Out of Centre)	0.9	24	40	58	MULTI-MODAL	20/09/2006	One-Off		
GC-03-A-01	TERRACED, GLASGOW	GLASGOW CITY	Suburban Area (PPS6 Out of Centre)	1.1	67		134	VEHICLES	19/03/1988	One-Off		
GC-03-A-02	MIXED HOUSES, GARROWHILL	GLASGOW CITY	Not Known	5.3	92			VEHICLES	19/03/1988	One-Off		
GC-03-A-03	DET./TERRACED, GLASGOW	GLASGOW CITY	Edge of Town	3.6	153			VEHICLES	09/04/1988	One-Off		
GC-03-A-04	MIXED HOUSES, GLASGOW	GLASGOW CITY	Edge of Town	8.7	318			VEHICLES	16/04/1988	One-Off		
GC-03-A-05	MIXED HOUSES, GLASGOW	GLASGOW CITY	Neighbourhood Centre (PPS6 Local Centre)	1.8	56			VEHICLES	31/07/1999	One-Off		
GM-03-A-01	SEMI DETACHED, BOLTON	GREATER MANCHESTER	Edge of Town	2.4	83		172	VEHICLES	09/03/1997	One-Off		
GM-03-A-02	HOUSING, BOLTON	GREATER MANCHESTER	Edge of Town	13	140			VEHICLES	31/01/1991	One-Off		
GM-03-A-03	DETACHED, NEAR WIGAN	GREATER MANCHESTER	Edge of Town	8.9	125			VEHICLES	18/02/1991	One-Off		
GM-03-A-04	HOUSING, BOLTON	GREATER MANCHESTER	Edge of Town	7.2	204			VEHICLES	27/11/1996	One-Off		
GM-03-A-05	HOUSING, HYDE	GREATER MANCHESTER	Edge of Town	3.3	65			VEHICLES	27/11/1996	One-Off		
GM-03-A-06	DETACHED, NEAR WIGAN	GREATER MANCHESTER	Edge of Town	9.4	222			VEHICLES	21/06/1998	One-Off		
GM-03-A-07	SEMI DETACHED, MANCHESTER	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	4.1	138			MULTI-MODAL	09/11/2001	One-Off		
GM-03-A-08	SEMI DETACHED, STOCKPORT	GREATER MANCHESTER	Edge of Town	6.6	247			MULTI-MODAL	12/10/2001	One-Off		
GM-03-A-09	MIXED HOUSES, ASHTON-U-LYNE	GREATER MANCHESTER	Edge of Town	13.5	342			VEHICLES	21/05/1998	One-Off		
GS-03-A-01	SEMI D./TERRACED, GLOUCESTER	GLOUCESTERSHIRE	Edge of Town Centre	1.85	73	56.59		MULTI-MODAL	25/05/2004	One-Off		
HC-03-A-01	DETACHED, EASTLEIGH	HAMPSHIRE	Edge of Town	16	300			VEHICLES	19/08/1999	One-Off		
HC-03-A-02	HOUSING, NEAR FAREHAM	HAMPSHIRE	Edge of Town	58.5	1216			VEHICLES	24/05/1988	One-Off		
HC-03-A-03	HOUSING, NEAR FAREHAM	HAMPSHIRE	Edge of Town	15	325			VEHICLES	18/05/1988	One-Off		
HC-03-A-06	HOUSING, BASINGSTOKE	HAMPSHIRE	Suburban Area (PPS6 Out of Centre)	202	4334			VEHICLES	18/05/1988	One-Off		
HC-03-A-07	HOUSING, NEAR EASTLEIGH	HAMPSHIRE	Edge of Town	3	81			VEHICLES	20/08/1987	One-Off		
HC-03-A-08	HOUSING, WINCHESTER	HAMPSHIRE	Edge of Town	4.8	27			VEHICLES	16/06/1988	One-Off		
HC-03-A-09	HOUSING, NEAR SOUTHAMPTON	HAMPSHIRE	Edge of Town Centre	6.8	210			VEHICLES	22/09/1988	One-Off		
HC-03-A-10	MIXED HOUSES, YATELEY	HAMPSHIRE	Edge of Town	1.3	26			VEHICLES	05/05/1987	One-Off		
HC-03-A-11	MIXED HOUSES, COWPLAIN	HAMPSHIRE	Edge of Town	118	1165			VEHICLES	26/05/1988	One-Off		
HC-03-A-12	MIXED HOUSES/FLATS,WINCHSTR	HAMPSHIRE	Edge of Town	45	1040			VEHICLES	18/05/1988	Initial Survey		
HC-03-A-13	MIXED HOUSES/FLATS, FLEET	HAMPSHIRE	Edge of Town	31	747			VEHICLES	05/03/1998	One-Off		
HC-03-A-14	MIXED HOUSES/FLATS,WINCHSTR	HAMPSHIRE	Edge of Town	45	1040			VEHICLES	26/02/1998	Re-Survey		
HC-03-A-15	MIXED HOUSES, EASTLEIGH	HAMPSHIRE	Suburban Area (PPS6 Out of Centre)	32	700			VEHICLES	18/08/1999	One-Off		
HC-03-A-16	MIXED HOUSES/FLATS,WINCHSTR	HAMPSHIRE	Edge of Town	45	1040			VEHICLES	10/12/2000	Re-Survey		
HF-03-A-01	MIXED HOUSES, WELWYN GC	HERTFORDSHIRE	Edge of Town Centre	1.8	53			MULTI-MODAL	06/09/2002	One-Off		
HF-03-A-02	HOUSES, WELWYN GDN. CITY	HERTFORDSHIRE	Suburban Area (PPS6 Out of Centre)	4.08	195	70.91	603	MULTI-MODAL	20/07/2008	One-Off		
HI-03-A-01	HOUSING, CONON BRIDGE	HIGHLAND	Suburban Area (PPS6 Out of Centre)		64			VEHICLES	13/11/1991	One-Off		
HI-03-A-02	HOUSING, DINGWALL	HIGHLAND	Suburban Area (PPS6 Out of Centre)		106			VEHICLES	01/11/1991	One-Off		
HI-03-A-03	HOUSING, INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		78			VEHICLES	17/07/1991	One-Off		
HI-03-A-06	BUNGALOWS, FORTROSE	HIGHLAND	Edge of Town	1.1	7			VEHICLES	09/12/1998	One-Off		
HI-03-A-07	BUNGALOWS, FORTROSE	HIGHLAND	Edge of Town Centre	0.5	5			VEHICLES	09/12/1998	One-Off		
HI-03-A-08	TERRACED, MARYBANK	HIGHLAND	Neighbourhood Centre (PPS6 Local Centre)	0.7	9			VEHICLES	20/12/1998	One-Off		
HI-03-A-09	SEMI DETACHED, ROSEMARKIE	HIGHLAND	Neighbourhood Centre (PPS6 Local Centre)	0.6	14			VEHICLES	08/12/1998	One-Off		
HI-03-A-10	BUNGALOWS, INVERNESS	HIGHLAND	Edge of Town	0.8	11			VEHICLES	08/12/1998	One-Off		
HI-03-A-11	BUNGALOWS, INVERNESS	HIGHLAND	Edge of Town	4.6	85	21.63	185	MULTI-MODAL	05/06/2006	One-Off		
HI-03-A-12	DETACHED/SEMI D., INVERNESS	HIGHLAND	Edge of Town	0.5	11			VEHICLES	06/12/1998	One-Off		
HI-03-A-13	HOUSING, INVERNESS	HIGHLAND	Edge of Town	0.48	9	18.75	38	MULTI-MODAL	21/05/2009	One-Off		
KC-03-A-01	HOUSING, MAIDSTONE	KENT	Suburban Area (PPS6 Out of Centre)		870			VEHICLES	15/06/1988	One-Off		
KC-03-A-02	HOUSING, NEW ASH GREEN	KENT	Free Standing (PPS6 Out of Town)		2100			VEHICLES	19/07/1988	One-Off		
KD-03-A-02	TERRACED/SEMI-D., NEWBRIDGE	KILDARE	Suburban Area (PPS6 Out of Centre)	2.74	71	30.6	210	MULTI-MODAL	12/05/2009	One-Off		
KH-03-A-01	DETACHED/SEMI DET., HULL	KINGSTON UPON HULL	Suburban Area (PPS6 Out of Centre)	17.5	473			VEHICLES	24/06/1993	One-Off		
KI-03-A-01	DETACHED, KINGSTON	KINGSTON	Suburban Area (PPS6 Out of Centre)	1.37	12	10.34	53	MULTI-MODAL	24/06/2010	One-Off		
KI-03-A-02	DETACHED, KINGSTON	KINGSTON	Suburban Area (PPS6 Out of Centre)	2.26	20	10.15	85	MULTI-MODAL	24/06/2010	One-Off		
KK-03-A-01	DETACHED, KILKENNY	KILKENNY	Edge of Town Centre	1	10	10	30	MULTI-MODAL	24/11/2008	One-Off		
KK-03-A-02	SEMI-DETACHED, KILKENNY	KILKENNY	Edge of Town Centre	2.51	68	31.63	144	MULTI-MODAL	29/11/2008	One-Off		
KK-03-A-03	MIXED HOUSING, KILKENNY	KILKENNY	Edge of Town	6.5	70	14.29	176	MULTI-MODAL	26/11/2008	One-Off		
KK-03-A-04	TERRACED, KILKENNY	KILKENNY	Edge of Town Centre	1.6	30	18.75	60	VEHICLES	27/11/2008	One-Off		
KN-03-A-01	TERRACED, NORTH KENSINGTON	KENSINGTON AND CHELSEA	Suburban Area (PPS6 Out of Centre)	0.95	24	25.26	72	MULTI-MODAL	26/01/2007	One-Off		

LC-03-A-01	HOUSING, CHORLEY	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	8.3	125		VEHICLES	14/06/1989	One-Off
LC-03-A-02	HOUSING, CHORLEY	LANCASHIRE	Edge of Town	13.9	206		VEHICLES	14/06/1989	One-Off
LC-03-A-03	DETACHED, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	6	77		VEHICLES	21/03/1991	One-Off
LC-03-A-04	DETACHED, PRESTON	LANCASHIRE	Edge of Town	5.8	120		VEHICLES	22/03/1991	One-Off
LC-03-A-05	SEMI DETACHED, PRESTON	LANCASHIRE	Edge of Town	2.4	70		VEHICLES	22/03/1991	One-Off
LC-03-A-06	DETACHED/LINK DET., PRESTON	LANCASHIRE	Neighbourhood Centre (PPS6 Local Centre)	28.7	157		VEHICLES	13/05/1991	One-Off
LC-03-A-08	DETACHED, LONGRIDGE	LANCASHIRE	Edge of Town	2.2	47		VEHICLES	12/07/1994	One-Off
LC-03-A-09	DETACHED, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	4.1	83		VEHICLES	16/03/1994	One-Off
LC-03-A-10	DETACHED, NEAR BLACKBURN	LANCASHIRE	Neighbourhood Centre (PPS6 Local Centre)	9.6	147		VEHICLES	22/09/1994	One-Off
LC-03-A-11	DETACHED, GARSTANG	LANCASHIRE	Edge of Town	2.4	52		VEHICLES	25/08/1994	One-Off
LC-03-A-12	BUNGALOWS, GLASSON	LANCASHIRE	Neighbourhood Centre (PPS6 Local Centre)	1.6	29		VEHICLES	13/05/1997	One-Off
LC-03-A-13	DETACHED, NEAR CHORLEY	LANCASHIRE	Edge of Town	2.4	37		VEHICLES	21/07/1997	One-Off
LC-03-A-14	DETACHED, NEAR BLACKBURN	LANCASHIRE	Edge of Town	2.4	49		VEHICLES	28/10/1994	One-Off
LC-03-A-15	DETACHED, NEAR BLACKBURN	LANCASHIRE	Edge of Town	1.2	38		VEHICLES	27/10/1994	One-Off
LC-03-A-16	DETACHED, PRESTON	LANCASHIRE	Edge of Town	0.8	18		VEHICLES	26/03/1998	One-Off
LC-03-A-17	DETACHED, BURNLEY	LANCASHIRE	Edge of Town		78		VEHICLES	29/10/1995	One-Off
LC-03-A-19	DETACHED, WESHAM	LANCASHIRE	Edge of Town	7.2	115		VEHICLES	24/05/1995	One-Off
LC-03-A-20	TERRACED, BLACKPOOL	LANCASHIRE	Edge of Town	0.4	21		VEHICLES	13/06/1995	One-Off
LC-03-A-21	DETACHED, NEAR PRESTON	LANCASHIRE	Edge of Town	10.2	221		VEHICLES	26/09/1995	One-Off
LC-03-A-22	BUNGALOWS, BLACKPOOL	LANCASHIRE	Edge of Town	6.43	98	15.24	MULTI-MODAL	18/10/2005	One-Off
LC-03-A-23	DETACHED/SEMI DET., CHORLEY	LANCASHIRE	Edge of Town	32.4	585		VEHICLES	29/04/1994	One-Off
LC-03-A-24	MIXED HOUSES, NEAR PRESTON	LANCASHIRE	Neighbourhood Centre (PPS6 Local Centre)	3	66		VEHICLES	04/05/1995	One-Off
LC-03-A-25	DETACHED/SEMI DET.,THORNTON	LANCASHIRE	Edge of Town		368		VEHICLES	01/11/1993	One-Off
LC-03-A-26	DETACHED/SEMI D., BLACKBURN	LANCASHIRE	Edge of Town	2	62		VEHICLES	20/09/1994	One-Off
LC-03-A-27	DETACHED/SEMI D., BLACKBURN	LANCASHIRE	Edge of Town	4.5	73		VEHICLES	20/09/1994	One-Off
LC-03-A-28	DETACHED/SEMI D., LANCASTER	LANCASHIRE	Edge of Town	4.2	135		VEHICLES	25/06/1997	One-Off
LC-03-A-29	DETACHED/SEMI D., BLACKBURN	LANCASHIRE	Edge of Town	7.6	185	28.03	MULTI-MODAL	10/06/2004	One-Off
LE-03-A-01	DETACHED, MELTON MOWBRAY	LEICESTERSHIRE	Edge of Town	0.4	11	27.5	33 MULTI-MODAL	03/05/2005	One-Off
LN-03-A-01	MIXED HOUSES, LINCOLN	LINCOLNSHIRE	Edge of Town	6	150	30.74	520 MULTI-MODAL	15/05/2007	One-Off
LN-03-A-02	MIXED HOUSES, LINCOLN	LINCOLNSHIRE	Suburban Area (PPS6 Out of Centre)	8.79	186	26.23	562 MULTI-MODAL	14/05/2007	One-Off
MS-03-A-01	TERRACED, RUNCORN	MERSEYSIDE	Neighbourhood Centre (PPS6 Local Centre)	9.4	372	41.33	MULTI-MODAL	06/10/2005	One-Off
MS-03-A-02	DETACHED, LIVERPOOL	MERSEYSIDE	Suburban Area (PPS6 Out of Centre)	1.3	31	27.19	122 MULTI-MODAL	05/09/2010	One-Off
MT-03-A-01	SEMI DETACHED, TRELEWIS	MERTHYR TYDFIL	Free Standing (PPS6 Out of Town)	3.3	100		VEHICLES	08/05/1990	One-Off
MT-03-A-02	TERRACED, MERTHYR TYDFIL	MERTHYR TYDFIL	Edge of Town	7.1	270		VEHICLES	24/05/1990	One-Off
NE-03-A-01	DETACHED, NEAR CLEETHORPES	NORTH EAST LINCOLNSHIRE	Edge of Town	6	175		VEHICLES	08/07/1993	One-Off
NS-03-A-01	DETACHED, NEAR BRISTOL	NORTH SOMERSET	Neighbourhood Centre (PPS6 Local Centre)	8.2	126		VEHICLES	20/09/1992	One-Off
NS-03-A-02	TERRACED, WESTON-SUP.-MARE	NORTH SOMERSET	Suburban Area (PPS6 Out of Centre)		52		VEHICLES	24/09/1992	One-Off
NS-03-A-03	DETACHED, WRINGTON	NORTH SOMERSET	Neighbourhood Centre (PPS6 Local Centre)	1	20		80 VEHICLES	17/09/1992	One-Off
NS-03-A-04	SEMI D./DETACHED, WRINGTON	NORTH SOMERSET	Neighbourhood Centre (PPS6 Local Centre)	1	48		144 VEHICLES	17/09/1992	One-Off
NS-03-A-05	DETACHED, WRINGTON	NORTH SOMERSET	Neighbourhood Centre (PPS6 Local Centre)	1.4	33		VEHICLES	17/09/1992	One-Off
NS-03-A-06	HOUSING, WRINGTON	NORTH SOMERSET	Neighbourhood Centre (PPS6 Local Centre)	1.5	24		64 VEHICLES	17/09/1992	One-Off
NT-03-A-01	BUNGALOWS, COLLINGHAM	NOTTINGHAMSHIRE	Neighbourhood Centre (PPS6 Local Centre)	8.2	125		VEHICLES	26/11/1998	One-Off
NT-03-A-02	DETACHED, NOTTINGHAM	NOTTINGHAMSHIRE	Edge of Town	7.9	201		VEHICLES	24/11/1998	One-Off
NT-03-A-03	SEMI DETACHED,KIRKBY-IN-ASHFD	NOTTINGHAMSHIRE	Edge of Town	7.53	166	25.5	498 MULTI-MODAL	28/06/2006	One-Off
NT-03-A-04	MIXED HOUSES, NEWARK	NOTTINGHAMSHIRE	Edge of Town	16.8	394		VEHICLES	26/11/1998	One-Off
NT-03-A-05	DETACHED/SEMI DET.,MANSFIELD	NOTTINGHAMSHIRE	Edge of Town	1.9	61		VEHICLES	08/12/1998	One-Off
NT-03-A-06	DET./BUNGALOWS, NOTTINGHAM	NOTTINGHAMSHIRE	Edge of Town	8.1	160		VEHICLES	24/11/1998	One-Off
NT-03-A-07	MIXED HOUSES, NOTTINGHAM	NOTTINGHAMSHIRE	Edge of Town	5.6	174		VEHICLES	08/12/1998	One-Off
NY-03-A-01	MIXED HOUSES,NORTHALLERTON	NORTH YORKSHIRE	Suburban Area (PPS6 Out of Centre)	3.3	52	18.31	152 MULTI-MODAL	25/09/2007	One-Off
NY-03-A-02	DETACHED, RIPON	NORTH YORKSHIRE	Edge of Town	1.67	22	14.38	98 MULTI-MODAL	21/09/2008	One-Off
NY-03-A-03	PRIVATE HOUSING, BOROUGHBRIDGE	NORTH YORKSHIRE	Edge of Town Centre	0.35	14	60.87	34 MULTI-MODAL	15/09/2008	One-Off
NY-03-A-04	PRIVATE HOUSING, BOROUGHBRIDGE	NORTH YORKSHIRE	Edge of Town	1.79	23	14.65	101 MULTI-MODAL	14/09/2008	One-Off
NY-03-A-05	HOUSES AND FLATS, RIPON	NORTH YORKSHIRE	Edge of Town	2.21	71	48.3	138 MULTI-MODAL	22/09/2008	One-Off
RC-03-A-01	HOUSING, WATTSTOWN	RHONDDA CYNON TAFF	Neighbourhood Centre (PPS6 Local Centre)	6.6	277		VEHICLES	13/02/1990	One-Off
RC-03-A-02	TERRACED, STANLEYTOWN	RHONDDA CYNON TAFF	Neighbourhood Centre (PPS6 Local Centre)	4.5	154		VEHICLES	19/06/1990	One-Off
RC-03-A-03	HOUSING, TREORCHY	RHONDDA CYNON TAFF	Edge of Town	1.6	30		VEHICLES	11/07/1995	One-Off
RE-03-A-01	SEMI D./DETACHED, READING	READING	Edge of Town	11.1	243		VEHICLES	20/10/1991	One-Off
RE-03-A-02	DETACHED, READING	READING	Edge of Town	3.9	91		VEHICLES	27/10/1991	One-Off
RE-03-A-03	DETACHED, READING	READING	Edge of Town	12	98		VEHICLES	30/10/1988	One-Off
RE-03-A-04	DETACHED, READING	READING	Edge of Town	6	95		VEHICLES	27/10/1991	One-Off
RE-03-A-05	MIXED HOUSES, READING	READING	Suburban Area (PPS6 Out of Centre)	14	436		VEHICLES	27/10/1991	One-Off
RE-03-A-06	DETACHED/SEMI DET., READING	READING	Edge of Town	5	176		VEHICLES	20/10/1991	One-Off
RE-03-A-07	DET., BUNGALOWS, READING	READING	Suburban Area (PPS6 Out of Centre)	3.6	84		VEHICLES	03/11/1991	One-Off
RE-03-A-08	DETACHED/SEMI DET., READING	READING	Suburban Area (PPS6 Out of Centre)	5	137		VEHICLES	20/10/1991	One-Off
RE-03-A-09	BUNGALOWS/DET., READING	READING	Suburban Area (PPS6 Out of Centre)	3.8	120		VEHICLES	27/10/1991	One-Off
RI-03-A-01	HOUSING, BEVERLEY	EAST RIDING OF YORKSHIRE	Edge of Town	10.1	254		VEHICLES	23/06/1993	One-Off
RI-03-A-02	MIXED HOUSES, BEVERLEY	EAST RIDING OF YORKSHIRE	Edge of Town	14.1	400		VEHICLES	13/02/1990	One-Off
RI-03-A-03	MIXED HOUSES, BEVERLEY	EAST RIDING OF YORKSHIRE	Suburban Area (PPS6 Out of Centre)	36.7	533		VEHICLES	13/02/1990	One-Off
RO-03-A-01	MIXED HOUSES, ROSCOMMON	ROSCOMMON	Edge of Town	7.2	80	11.11	305 MULTI-MODAL	07/05/2009	One-Off
SC-03-A-01	HOUSING, WOKING	SURREY	Neighbourhood Centre (PPS6 Local Centre)		2942		VEHICLES	09/02/1989	One-Off
SC-03-A-02	SEMI DETACHED, EPSOM	SURREY	Edge of Town	20.6	514		VEHICLES	03/10/2000	One-Off
SC-03-A-03	DETACHED, EAST MOLESEY	SURREY	Suburban Area (PPS6 Out of Centre)	3	54		MULTI-MODAL	12/11/2002	One-Off
SF-03-A-01	SEMI DETACHED, IPSWICH	SUFFOLK	Suburban Area (PPS6 Out of Centre)	2.4	77	37.4	234 MULTI-MODAL	23/05/2007	One-Off
SF-03-A-02	SEMI DET./TERRACED, IPSWICH	SUFFOLK	Edge of Town	7.1	230	39.18	606 MULTI-MODAL	24/05/2007	One-Off
SF-03-A-03	MIXED HOUSES, BURY ST EDMDS	SUFFOLK	Edge of Town	3.6	101	29.71	MULTI-MODAL	15/05/2006	One-Off
SH-03-A-01	MIXED HOUSES, BRIDGNORTH	SHROPSHIRE	Edge of Town	3.4	52		VEHICLES	08/05/1998	One-Off
SH-03-A-02	DETATCHED, TELFORD	SHROPSHIRE	Edge of Town	2.7	57	28.5	214 MULTI-MODAL	21/06/2009	One-Off
SH-03-A-03	DETATCHED, SHREWSBURY	SHROPSHIRE	Edge of Town	0.51	10	25	33 MULTI-MODAL	26/06/2009	One-Off
SH-03-A-04	TERRACED, SHREWSBURY	SHROPSHIRE	Suburban Area (PPS6 Out of Centre)	5.3	108	25.12	329 MULTI-MODAL	11/06/2009	One-Off
SK-03-A-01	SEMI D./TERRACED, CAN. WATER	SOUTHWARK	Suburban Area (PPS6 Out of Centre)	0.34	15	75	63 MULTI-MODAL	23/10/2008	One-Off
SR-03-A-01	DETACHED, STIRLING	STIRLING	Suburban Area (PPS6 Out of Centre)	4.05	115	38.33	426 MULTI-MODAL	23/04/2007	One-Off
ST-03-A-01	SEMI DETACHED, CHEADLE	STAFFORDSHIRE	Edge of Town	8.4	227		VEHICLES	23/07/1995	One-Off
ST-03-A-02	SEMI D./DETACHED, TAMWORTH	STAFFORDSHIRE	Edge of Town	24.8	531		VEHICLES	16/07/1995	One-Off
ST-03-A-03	MIXED HOUSES, STAFFORD	STAFFORDSHIRE	Edge of Town	8.5	224		MULTI-MODAL	04/07/2000	Re-Survey
ST-03-A-04	MIXED HOUSING, STAFFORD	STAFFORDSHIRE	Edge of Town	8.5	224		VEHICLES	16/07/1995	Initial Survey
ST-03-A-05	TERRACED/DETACHED, STOKE	STAFFORDSHIRE	Suburban Area (PPS6 Out of Centre)	0.52	14	48.28	33 MULTI-MODAL	26/11/2008	One-Off
TV-03-A-01	MIXED HOUSES/FLATS, HARTLEPL	TEES VALLEY	Suburban Area (PPS6 Out of Centre)	6.9	225	38.14	362 MULTI-MODAL	14/04/2005	One-Off
TW-03-A-01	SEMI DETACHED, SUNDERLAND	TYNE & WEAR	Edge of Town	2.5	81		MULTI-MODAL	18/09/2002	One-Off
TY-03-A-01	DETACHED/SEMI DET., OMAGH	TYRONE	Edge of Town	2.2	44		VEHICLES	03/10/2003	One-Off
WA-03-A-01	DET./SEMI-DET., WATERFORD	WATERFORD	Suburban Area (PPS6 Out of Centre)	2.3	70	35	162 MULTI-MODAL	18/11/2008	One-Off
WA-03-A-02	DETACHED, WATERFORD	WATERFORD	Edge of Town	14.2	290	30.21	860 MULTI-MODAL	17/11/2008	One-Off
WA-03-A-03	TERR./SEMI-DET., WATERFORD	WATERFORD	Suburban Area (PPS6 Out of Centre)	3.55	70	35	146 MULTI-MODAL	16/11/2008	One-Off
WB-03-A-01	SEMI DETACHED, THATCHAM	WEST BERKSHIRE	Edge of Town	9.7	245		VEHICLES	10/11/1991	One-Off
WB-03-A-02	MIXED HOUSES, THATCHAM	WEST BERKSHIRE	Edge of Town	25.5	784		VEHICLES	03/11/1991	One-Off
WE-03-A-01	PRINCES MEWS, NOTTING HILL	WESTMINSTER	Suburban Area (PPS6 Out of Centre)	0.31	18	78.26	36 MULTI-MODAL	15/10/2009	One-Off
WF-03-A-01	TERRACED, WALTHAMSTOW	WALTHAM FOREST	Edge of Town Centre	0.97	53	54.64	204 MULTI-MODAL	30/01/2007	One-Off
WL-03-A-01	SEMI D./TERRACED W. BASSETT	WILTSHIRE	Edge of Town	3.1	99	43.81	MULTI-MODAL	02/10/2006	One-Off
WM-03-A-01	TERRACED, COVENTRY	WEST MIDLANDS	Suburban Area (PPS6 Out of Centre)	1.5	79	52.67	168 MULTI-MODAL	03/02/2006	One-Off
WM-03-A-02	DETACHED/SEMI D., STRBRIDGE	WEST MIDLANDS	Suburban Area (PPS6 Out of Centre)	0.4	12	40	MULTI-MODAL	26/04/2006	One-Off
WM-03-A-03	MIXED HOUSING, COVENTRY	WEST MIDLANDS	Edge of Town	3.32	84	28.97	228 MULTI-MODAL	24/09/2007	One-Off
WO-03-A-01	DETACHED, BROMSGROVE	WORCESTERSHIRE	Suburban Area (PPS6 Out of Centre)	1	10	12.5	26 MULTI-MODAL	23/06/2005	One-Off
WO-03-A-02	SEMI DETACHED, REDDITCH	WORCESTERSHIRE	Edge of Town	2.2	48	28.24	MULTI-MODAL	02/05/2006	One-Off
WO-03-A-03	DETACHED, KIDDERMINSTER	WORCESTERSHIRE	Suburban Area (PPS6 Out of Centre)	5.5	138	34.5	MULTI-MODAL	05/05/2006	One-Off
WO-03-A-04	MIXED HOUSES, WORCESTER	WORCESTERSHIRE	Edge of Town	39.5	792		VEHICLES	26/05/2002	One-Off
WO-03-A-05	TERRACED/DET., BROMSGROVE	WORCESTERSHIRE	Edge of Town	9.2	215		VEHICLES	23/05/2002	Initial Survey
WO-03-A-06	DET./TERRACED, BROMSGROVE	WORCESTERSHIRE	Edge of Town	6.7	232	58.59	MULTI-MODAL	30/06/2005	Re-Survey
WR-03-A-01	SEMI DETACHED, WREXHAM	WREXHAM	Edge of Town	2.5	82	41	MULTI-MODAL	05/07/2004	One-Off
WS-03-A-01	SEMI D./TERRACED, NR CH'CHSTR	WEST SUSSEX	Neighbourhood Centre (PPS6 Local Centre)	3.5	90		VEHICLES	22/10/1989	Initial Survey
WS-03-A-02	SEMI D./TERRACED, NR CH'CHSTR	WEST SUSSEX	Neighbourhood Centre (PPS6 Local Centre)	3.5	90		270 VEHICLES	20/11/1994	Re-Survey
WS-03-A-03	SEMI D./TERRACED, NR CH'CHSTR	WEST SUSSEX	Neighbourhood Centre (PPS6 Local Centre)	2	90		270 VEHICLES	26/11/2000	Re-Survey

Vehicle Only Surveys
Prior to 2003
Location
Weekend Survey
Initial Survey

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	BD	BEDFORDSHIRE	2 days
	EX	ESSEX	1 days
03	**SOUTH WEST**		
	CW	CORNWALL	2 days
	GS	GLOUCESTERSHIRE	1 days
	WL	WILTSHIRE	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
	SF	SUFFOLK	3 days
05	**EAST MIDLANDS**		
	DS	DERBYSHIRE	1 days
	LE	LEICESTERSHIRE	1 days
	LN	LINCOLNSHIRE	2 days
	NT	NOTTINGHAMSHIRE	1 days
06	**WEST MIDLANDS**		
	SH	SHROPSHIRE	2 days
	ST	STAFFORDSHIRE	1 days
	WM	WEST MIDLANDS	3 days
	WO	WORCESTERSHIRE	4 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	3 days
08	**NORTH WEST**		
	CH	CHESHIRE	2 days
	LC	LANCASHIRE	2 days
	MS	MERSEYSIDE	1 days
09	**NORTH**		
	CB	CUMBRIA	2 days
	TV	TEES VALLEY	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Range: 10 to 372 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 05/09/10

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	6 days
Tuesday	11 days
Wednesday	4 days
Thursday	12 days
Friday	4 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	37 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Edge of Town Centre	3
Suburban Area (PPS6 Out of Centre)	15
Edge of Town	17
Neighbourhood Centre (PPS6 Local Centre)	2

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	27
Out of Town	1
No Sub Category	9

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

LIST OF SITES relevant to selection parameters

1 **BD-03-A-01** **SEMI DETACHED, LUTON** **BEDFORDSHIRE**
NEW BEDFORD ROAD

LUTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 131

2 **BD-03-A-02** **SEMI DETACHED, LUTON** **BEDFORDSHIRE**
RIDDY LANE

LUTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 82

3 **CA-03-A-02** **MIXED HOUSES, PETERBOROUGH** **CAMBRIDGESHIRE**
THORPE ROAD

PETERBOROUGH
Edge of Town Centre
Residential Zone
Total Number of dwellings: 363

4 **CB-03-A-03** **SEMI DETACHED, WORKINGTON** **CUMBRIA**
HAWKSHEAD AVENUE

WORKINGTON
Edge of Town
Residential Zone
Total Number of dwellings: 40

5 **CB-03-A-04** **SEMI DETACHED, WORKINGTON** **CUMBRIA**
MOORCLOSE ROAD
SALTERBACK
WORKINGTON
Edge of Town
No Sub Category
Total Number of dwellings: 82

6 **CH-03-A-05** **DETACHED, CREWE** **CHESHIRE**
SYDNEY ROAD
SYDNEY
CREWE
Edge of Town
Residential Zone
Total Number of dwellings: 17

7 **CH-03-A-06** **SEMI-DET./BUNGALOWS,CREWE** **CHESHIRE**
CREWE ROAD

CREWE
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 129

8 **CW-03-A-01** **TERRACED, PENZANCE** **CORNWALL**
ALVERTON ROAD

PENZANCE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 13

9 **CW-03-A-02** **SEMI D./DETATCHED, TRURO** **CORNWALL**
BOSVEAN GARDENS

TRURO
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 73

LIST OF SITES relevant to selection parameters (Cont.)

10 **DS-03-A-01** **SEMI D./TERRACED, DRONFIELD** **DERBYSHIRE**
THE AVENUE
HOLMESDALE
DRONFIELD
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 20

11 **EX-03-A-01** **SEMI-DET., STANFORD-LE-HOPE** **ESSEX**
MILTON ROAD
CORRINGHAM
STANFORD-LE-HOPE
Edge of Town
Residential Zone
Total Number of dwellings: 237

12 **GS-03-A-01** **SEMI D./TERRACED, GLOUCESTER** **GLOUCESTERSHIRE**
KINGSHOLM ROAD
KINGSHOLM
GLOUCESTER
Edge of Town Centre
No Sub Category
Total Number of dwellings: 73

13 **LC-03-A-22** **BUNGALOWS, BLACKPOOL** **LANCASHIRE**
CLIFTON DRIVE NORTH

BLACKPOOL
Edge of Town
Residential Zone
Total Number of dwellings: 98

14 **LC-03-A-29** **DETACHED/SEMI D., BLACKBURN** **LANCASHIRE**
REVIDGE ROAD
FOUR LANE ENDS
BLACKBURN
Edge of Town
Residential Zone
Total Number of dwellings: 185

15 **LE-03-A-01** **DETACHED, MELTON MOWBRAY** **LEICESTERSHIRE**
REDWOOD AVENUE

MELTON MOWBRAY
Edge of Town
Residential Zone
Total Number of dwellings: 11

16 **LN-03-A-01** **MIXED HOUSES, LINCOLN** **LINCOLNSHIRE**
BRANT ROAD
BRACEBRIDGE
LINCOLN
Edge of Town
Residential Zone
Total Number of dwellings: 150

17 **LN-03-A-02** **MIXED HOUSES, LINCOLN** **LINCOLNSHIRE**
HYKEHAM ROAD

LINCOLN
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 186

18 **MS-03-A-01** **TERRACED, RUNCORN** **MERSEYSIDE**
PALACE FIELDS AVENUE

RUNCORN
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total Number of dwellings: 372

LIST OF SITES relevant to selection parameters (Cont.)

19 **NT-03-A-03** **SEMI DETACHED,KIRKBY-IN-ASHFD** **NOTTINGHAMSHIRE**
B6018 SUTTON ROAD

KIRKBY-IN-ASHFIELD
Edge of Town
Residential Zone
Total Number of dwellings: 166

20 **NY-03-A-01** **MIXED HOUSES,NORTHALLERTON** **NORTH YORKSHIRE**
GRAMMAR SCHOOL LANE

NORTHALLERTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 52

21 **NY-03-A-03** **PRIVATE HOUSING, BOROUGHBRIDGE** **NORTH YORKSHIRE**
NEW ROW

BOROUGHBRIDGE
Edge of Town Centre
Residential Zone
Total Number of dwellings: 14

22 **NY-03-A-05** **HOUSES AND FLATS, RIPON** **NORTH YORKSHIRE**
BOROUGHBRIDGE ROAD

RIPON
Edge of Town
No Sub Category
Total Number of dwellings: 71

23 **SF-03-A-01** **SEMI DETACHED, IPSWICH** **SUFFOLK**
A1156 FELIXSTOWE ROAD
RACECOURSE
IPSWICH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 77

24 **SF-03-A-02** **SEMI DET./TERRACED, IPSWICH** **SUFFOLK**
STOKE PARK DRIVE
MAIDENHALL
IPSWICH
Edge of Town
Residential Zone
Total Number of dwellings: 230

25 **SF-03-A-03** **MIXED HOUSES, BURY ST EDMDS** **SUFFOLK**
BARTON HILL
FORNHAM ST MARTIN
BURY ST EDMUNDS
Edge of Town
Out of Town
Total Number of dwellings: 101

26 **SH-03-A-03** **DETATCHED, SHREWSBURY** **SHROPSHIRE**
SOMERBY DRIVE
BICTON HEATH
SHREWSBURY
Edge of Town
No Sub Category
Total Number of dwellings: 10

27 **SH-03-A-04** **TERRACED, SHREWSBURY** **SHROPSHIRE**
ST MICHAEL'S STREET

SHREWSBURY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 108

LIST OF SITES relevant to selection parameters (Cont.)

28 **ST-03-A-05** **TERRACED/DETACHED, STOKE** **STAFFORDSHIRE**
WATERMEET GROVE
ETRURIA
STOKE-ON-TRENT
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 14

29 **TV-03-A-01** **MIXED HOUSES/FLATS, HARTLEPL** **TEES VALLEY**
POWLETT ROAD

HARTLEPOOL
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 225

30 **WL-03-A-01** **SEMI D./TERRACED W. BASSETT** **WILTSHIRE**
MAPLE DRIVE

WOOTTON BASSETT
Edge of Town
Residential Zone
Total Number of dwellings: 99

31 **WM-03-A-01** **TERRACED, COVENTRY** **WEST MIDLANDS**
FOLESHILL ROAD
FOLESHILL
COVENTRY
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 79

32 **WM-03-A-02** **DETACHED/SEMI D., STRBRIDGE** **WEST MIDLANDS**
HEATH STREET

STOURBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 12

33 **WM-03-A-03** **MIXED HOUSING, COVENTRY** **WEST MIDLANDS**
BASELEY WAY
ROWLEYS GREEN
COVENTRY
Edge of Town
Residential Zone
Total Number of dwellings: 84

34 **WO-03-A-01** **DETACHED, BROMSGROVE** **WORCESTERSHIRE**
MARLBOROUGH AVENUE
ASTON FIELDS
BROMSGROVE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 10

35 **WO-03-A-02** **SEMI DETACHED, REDDITCH** **WORCESTERSHIRE**
MEADOWHILL ROAD

REDDITCH
Edge of Town
No Sub Category
Total Number of dwellings: 48

36 **WO-03-A-03** **DETACHED, KIDDERMINSTER** **WORCESTERSHIRE**
BLAKEBROOK
BLAKEBROOK
KIDDERMINSTER
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 138

LIST OF SITES relevant to selection parameters (Cont.)

37 WO-03-A-06 DET./TERRACED, BROMSGROVE WORCESTERSHIRE
ST GODWALDS ROAD
ASTON FIELDS
BROMSGROVE
Edge of Town
No Sub Category
Total Number of dwellings: 232

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	37	109	0.075	37	109	0.264	37	109	0.339
08:00 - 09:00	37	109	0.163	**37**	**109**	**0.404**	37	109	0.567
09:00 - 10:00	37	109	0.179	37	109	0.216	37	109	0.395
10:00 - 11:00	37	109	0.151	37	109	0.190	37	109	0.341
11:00 - 12:00	37	109	0.192	37	109	0.181	37	109	0.373
12:00 - 13:00	37	109	0.205	37	109	0.184	37	109	0.389
13:00 - 14:00	37	109	0.184	37	109	0.180	37	109	0.364
14:00 - 15:00	37	109	0.197	37	109	0.195	37	109	0.392
15:00 - 16:00	37	109	0.286	37	109	0.222	37	109	0.508
16:00 - 17:00	37	109	0.323	37	109	0.201	37	109	0.524
17:00 - 18:00	**37**	**109**	**0.383**	37	109	0.234	**37**	**109**	**0.617**
18:00 - 19:00	37	109	0.279	37	109	0.229	37	109	0.508
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			2.617			2.700			5.317

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	10 - 372 (units:)
Survey date date range:	01/01/03 - 05/09/10
Number of weekdays (Monday-Friday):	37
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	37	109	0.114	37	109	0.389	37	109	0.503
08:00 - 09:00	37	109	0.259	**37**	**109**	**0.825**	**37**	**109**	**1.084**
09:00 - 10:00	37	109	0.261	37	109	0.346	37	109	0.607
10:00 - 11:00	37	109	0.228	37	109	0.301	37	109	0.529
11:00 - 12:00	37	109	0.292	37	109	0.279	37	109	0.571
12:00 - 13:00	37	109	0.306	37	109	0.279	37	109	0.585
13:00 - 14:00	37	109	0.285	37	109	0.275	37	109	0.560
14:00 - 15:00	37	109	0.302	37	109	0.301	37	109	0.603
15:00 - 16:00	**37**	**109**	**0.621**	37	109	0.378	37	109	0.999
16:00 - 17:00	37	109	0.551	37	109	0.348	37	109	0.899
17:00 - 18:00	37	109	0.603	37	109	0.378	37	109	0.981
18:00 - 19:00	37	109	0.447	37	109	0.389	37	109	0.836
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			4.269			4.488			8.757

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	10 - 372 (units:)
Survey date date range:	01/01/03 - 05/09/10
Number of weekdays (Monday-Friday):	37
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	1

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Residential Trip Generation

Houses for Rent Site Selection

Reference	Description	Area	Location	SITE AREA	DWELLS	DENSITY	TOTBED	Survey Type	Most Recent Survey	Status	Travel Plan	SAM
AN-03-B-01	SEMI DETACHED, BELFAST	ANTRIM	Suburban Area (PPS6 Out of Centre)	1.6	70	73.68	180	VEHICLES	27/11/2008	One-Off		
BG-03-B-01	TERRACED, MAESTEG	BRIDGEND	Suburban Area (PPS6 Out of Centre)	4.8	182			VEHICLES	29/03/1990	One-Off		
CB-03-B-01	TERRACED, CARLISLE	CUMBRIA	Edge of Town	2	135			VEHICLES	28/10/2003	One-Off		
DB-03-B-01	SEMI DETACHED, RHYL	DENBIGHSHIRE	Edge of Town	1.3	43			VEHICLES	30/11/1999	One-Off		
DB-03-B-02	MIXED HOUSES, RHYL	DENBIGHSHIRE	Neighbourhood Centre (PPS6 Local Centre)	0.9	41			VEHICLES	29/11/1999	One-Off		
DH-03-B-01	SEMI DETACHED, COXHOE	DURHAM	Neighbourhood Centre (PPS6 Local Centre)	3.6	78			VEHICLES	09/06/2003	One-Off		
DL-03-B-01	TERRACED, DUBLIN	DUBLIN	Suburban Area (PPS6 Out of Centre)	0.8	45			MULTI-MODAL	20/11/2002	One-Off		
DV-03-B-01	TERRACED, PLYMOUTH	DEVON	Suburban Area (PPS6 Out of Centre)	0.8	35	58.33	80	MULTI-MODAL	06/07/2005	One-Off		
ES-03-B-01	BUNGALOWS, HAILSHAM	EAST SUSSEX	Edge of Town	0.3	14			MULTI-MODAL	03/07/2003	One-Off		
HI-03-B-01	HOUSING, INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		516			VEHICLES	17/08/1991	One-Off		
HI-03-B-02	ARMED FORCES HOU., INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		256			VEHICLES	23/08/1991	One-Off		
HI-03-B-03	HOUSING, INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		104			VEHICLES	08/07/1991	One-Off		
HI-03-B-04	SEMI DETACHED, INVERNESS	HIGHLAND	Neighbourhood Centre (PPS6 Local Centre)	0.4	11		13	VEHICLES	06/12/1998	One-Off		
HI-03-B-05	TERRACED, FORT WILLIAM	HIGHLAND	Neighbourhood Centre (PPS6 Local Centre)	5	126	36	308	VEHICLES	19/05/2009	One-Off		
HI-03-B-06	TERRACED, INVERNESS	HIGHLAND	Neighbourhood Centre (PPS6 Local Centre)	3.5	108	30.86	282	VEHICLES	21/05/2009	One-Off		
LC-03-B-01	TERRACED, BLACKPOOL	LANCASHIRE	Edge of Town	0.4	24			VEHICLES	13/06/1995	One-Off		
MO-03-B-01	SEMI DETACHED, ELGIN	MORAY	Edge of Town Centre	0.22	15	250	44	MULTI-MODAL	12/05/2006	One-Off		
MO-03-B-02	BUNGALOWS, ELGIN	MORAY	Edge of Town Centre	1.2	40	71.43	80	MULTI-MODAL	10/05/2006	One-Off		
NY-03-B-01	TERRACED HOUSING, THIRSK	NORTH YORKSHIRE	Suburban Area (PPS6 Out of Centre)	4.72	280	70.89	620	MULTI-MODAL	20/09/2007	One-Off		
RC-03-B-01	SEMI DETACHED,HENDREFORGAN	RHONDDA CYNON TAFF	Neighbourhood Centre (PPS6 Local Centre)	9.8	299			VEHICLES	22/03/1990	One-Off		
RC-03-B-02	TERRACED, TONYREFAIL	RHONDDA CYNON TAFF	Edge of Town	7.9	305			VEHICLES	05/04/1990	One-Off		
RC-03-B-03	TERRACED, MOUNTAIN ASH	RHONDDA CYNON TAFF	Neighbourhood Centre (PPS6 Local Centre)	11.9	473			VEHICLES	08/05/1990	One-Off		
SF-03-B-01	SEMI D./TERRACED, LOWESTOFT	SUFFOLK	Suburban Area (PPS6 Out of Centre)	1.5	46	35.38	123	MULTI-MODAL	20/09/2005	One-Off		
WO-03-B-01	TERRACED, WORCESTER	WORCESTERSHIRE	Edge of Town	2.2	76		230	VEHICLES	15/03/2002	One-Off		
WY-03-B-01	TERRACED, LEEDS	WEST YORKSHIRE	Suburban Area (PPS6 Out of Centre)	0.38	29	90.63	64	MULTI-MODAL	18/09/2007	One-Off		

Vehicle Only Surveys
Prior to 2003
Location

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
Category : B - HOUSES FOR RENT

MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
03	**SOUTH WEST**		
	DV	DEVON	1 days
04	**EAST ANGLIA**		
	SF	SUFFOLK	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	NY	NORTH YORKSHIRE	1 days
	WY	WEST YORKSHIRE	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of dwellings
Range: 14 to 280 (units:)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 20/09/07

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	2 days
Wednesday	1 days
Thursday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	2
Built-Up Zone	1
No Sub Category	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

LIST OF SITES relevant to selection parameters

1 **DV-03-B-01** **TERRACED, PLYMOUTH** **DEVON**
HAM DRIVE

PLYMOUTH
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Number of dwellings: 35

2 **ES-03-B-01** **BUNGALOWS, HAILSHAM** **EAST SUSSEX**
BOWLEY ROAD

HAILSHAM
Edge of Town
Residential Zone
Total Number of dwellings: 14

3 **NY-03-B-01** **TERRACED HOUSING, THIRSK** **NORTH YORKSHIRE**
NORTHALLERTON ROAD
NORBY
THIRSK
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 280

4 **SF-03-B-01** **SEMI D./TERRACED, LOWESTOFT** **SUFFOLK**
A1144 ST PETERS STREET

LOWESTOFT
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Number of dwellings: 46

5 **WY-03-B-01** **TERRACED, LEEDS** **WEST YORKSHIRE**
LINCOLN GREEN ROAD

LEEDS
Suburban Area (PPS6 Out of Centre)
Built-Up Zone
Total Number of dwellings: 29

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 03 - RESIDENTIAL/B - HOUSES FOR RENT

MULTI-MODAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	81	0.040	5	81	0.144	5	81	0.184
08:00 - 09:00	5	81	0.099	**5**	**81**	**0.191**	5	81	0.290
09:00 - 10:00	5	81	0.104	5	81	0.109	5	81	0.213
10:00 - 11:00	5	81	0.094	5	81	0.116	5	81	0.210
11:00 - 12:00	5	81	0.146	5	81	0.114	5	81	0.260
12:00 - 13:00	5	81	0.121	5	81	0.129	5	81	0.250
13:00 - 14:00	5	81	0.161	5	81	0.116	5	81	0.277
14:00 - 15:00	5	81	0.109	5	81	0.153	5	81	0.262
15:00 - 16:00	5	81	0.178	5	81	0.114	5	81	0.292
16:00 - 17:00	5	81	0.161	5	81	0.149	5	81	0.310
17:00 - 18:00	**5**	**81**	**0.235**	5	81	0.166	**5**	**81**	**0.401**
18:00 - 19:00	5	81	0.129	5	81	0.099	5	81	0.228
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.577			1.600			3.177

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	14 - 280 (units:)
Survey date date range:	01/01/03 - 20/09/07
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 03 - RESIDENTIAL/B - HOUSES FOR RENT

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 08:00	5	81	0.072	5	81	0.245	5	81	0.317
08:00 - 09:00	5	81	0.196	**5**	**81**	**0.658**	5	81	0.854
09:00 - 10:00	5	81	0.223	5	81	0.255	5	81	0.478
10:00 - 11:00	5	81	0.225	5	81	0.277	5	81	0.502
11:00 - 12:00	5	81	0.262	5	81	0.238	5	81	0.500
12:00 - 13:00	5	81	0.265	5	81	0.245	5	81	0.510
13:00 - 14:00	5	81	0.300	5	81	0.210	5	81	0.510
14:00 - 15:00	5	81	0.215	5	81	0.290	5	81	0.505
15:00 - 16:00	**5**	**81**	**0.574**	5	81	0.277	5	81	0.851
16:00 - 17:00	5	81	0.436	5	81	0.359	5	81	0.795
17:00 - 18:00	5	81	0.495	5	81	0.406	**5**	**81**	**0.901**
18:00 - 19:00	5	81	0.329	5	81	0.275	5	81	0.604
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			3.592			3.735			7.327

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	14 - 280 (units:)
Survey date date range:	01/01/03 - 20/09/07
Number of weekdays (Monday-Friday):	5
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	0

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Employment Trip Generation

B1 Office Site Selection

Reference	Description	Area	Location	GFA	EMPLOY	Survey Type	Most Recent Survey	Status	Travel Plan	SAM
AN-02-A-01	CONSULTING ENG., BELFAST	ANTRIM	Suburban Area (PPS6 Out of Centre)	2513	148	MULTI-MODAL	11/09/2006	Initial Survey	Yes	
AN-02-A-03	OFFICES, BELFAST	ANTRIM	Suburban Area (PPS6 Out of Centre)	2908	183	MULTI-MODAL	26/11/2008	Re-Survey	Yes	
AN-02-A-04	OFFICE, NEWTOWNABBEY	ANTRIM	Suburban Area (PPS6 Out of Centre)	11736	450	MULTI-MODAL	17/06/2010	One-Off		
AS-02-A-01	CLYDESDALE BANK, WESTHILL	ABERDEENSHIRE	Edge of Town	1200	133	VEHICLES	01/09/1999	One-Off		
AS-02-A-02	COUNCIL OFFICES, ABERDEEN	ABERDEENSHIRE	Suburban Area (PPS6 Out of Centre)	18363	703	VEHICLES	18/03/1999	One-Off		
BD-02-A-01	FINANCIAL ADVISORS, LUTON	BEDFORDSHIRE	Edge of Town	3066	213	VEHICLES	17/11/1992	One-Off		
BD-02-A-02	WASTE MANAGEMNT,ASPLEY HTH	BEDFORDSHIRE	Neighbourhood Centre (PPS6 Local Centre)	1296	113	VEHICLES	12/11/1992	One-Off		
BF-02-A-01	OFFICE, NEAR BRACKNELL	BRACKNELL FOREST	Neighbourhood Centre (PPS6 Local Centre)	7553		VEHICLES	25/11/1990	One-Off		
BR-02-A-01	GATEWAY HQ, BRISTOL	BRISTOL CITY	Edge of Town	31500		VEHICLES	15/10/1992	One-Off		
BT-02-A-01	OFFICES, KILBURN	BRENT	Neighbourhood Centre (PPS6 Local Centre)	408	50	MULTI-MODAL	19/09/2001	One-Off		
BT-02-A-02	OFFICE, WEMBLEY	BRENT	Suburban Area (PPS6 Out of Centre)	4750	450	MULTI-MODAL	22/06/2010	One-Off		
CA-02-A-01	OFFICE, CAMBRIDGE	CAMBRIDGESHIRE	Suburban Area (PPS6 Out of Centre)	4344	363	MULTI-MODAL	24/11/2000	One-Off		
CA-02-A-02	SUGAR HQ, PETERBOROUGH	CAMBRIDGESHIRE	Suburban Area (PPS6 Out of Centre)	12500	340	MULTI-MODAL	13/05/2004	One-Off		
CA-02-A-03	OFFICE, PETERBOROUGH	CAMBRIDGESHIRE	Edge of Town Centre	5750	452	MULTI-MODAL	08/05/2008	One-Off		
CB-02-A-01	RADIO STATION, CARLISLE	CUMBRIA	Suburban Area (PPS6 Out of Centre)	999	45	MULTI-MODAL	24/06/2002	One-Off		
CH-02-A-01	INSURANCE, NEAR WILMSLOW	CHESHIRE	Edge of Town	14000	660	VEHICLES	12/06/1990	One-Off		
CH-02-A-02	BANK COMPUT. HQ, NR MACC'FLD	CHESHIRE	Free Standing (PPS6 Out of Town)	37935	1608	VEHICLES	05/06/1990	One-Off		
CH-02-A-03	ICI, NEAR MACCLESFIELD	CHESHIRE	Free Standing (PPS6 Out of Town)	175000	3500	VEHICLES	05/06/1990	One-Off		
CI-02-A-01	OFFICES, BANK	CITY OF LONDON	Town Centre	1386	62	MULTI-MODAL	21/10/2009	One-Off		
CN-02-A-01	OFFICES, HOLBORN	CAMDEN	Edge of Town Centre	4062	469	MULTI-MODAL	23/10/2008	One-Off		
CN-02-A-02	OFFICES, CLERKENWELL	CAMDEN	Town Centre	6056	940	MULTI-MODAL	22/10/2008	One-Off		
CP-02-A-01	COUNCIL OFF., YSTRAD MYNACH	CAERPHILLY	Edge of Town	6500	400	VEHICLES	19/11/1992	One-Off		
CS-02-A-01	COUNCIL OFFICE, SLIGO	SLIGO	Town Centre	2750	55	MULTI-MODAL	23/09/2010	One-Off		
CW-02-A-01	COUNCIL OFFICES, CAMBORNE	CORNWALL	Suburban Area (PPS6 Out of Centre)	5400	323	MULTI-MODAL	04/07/2005	One-Off		
CW-02-A-02	INLAND REVENUE, ST AUSTELL	CORNWALL	Edge of Town Centre	4850	477	MULTI-MODAL	08/06/2007	One-Off		Yes
CW-02-A-03	COUNCIL OFFICES, TRURO	CORNWALL	Edge of Town	30000	1377	MULTI-MODAL	07/06/2007	One-Off	Yes	Yes
DC-02-A-01	OFFICES, BOURNEMOUTH	DORSET	Edge of Town	5585	225	VEHICLES	24/04/1996	One-Off		
DC-02-A-02	BANK HQ, POOLE	DORSET	Town Centre	40500	2330	VEHICLES	06/03/1990	One-Off		
DC-02-A-03	H.M. CUSTOMS, POOLE	DORSET	Town Centre	1936	126	VEHICLES	06/03/1990	One-Off		
DC-02-A-04	INSURANCE BROKERS, POOLE	DORSET	Suburban Area (PPS6 Out of Centre)	14643	953	VEHICLES	08/03/1990	One-Off		
DC-02-A-05	PUBLISHING COMPANY, POOLE	DORSET	Edge of Town Centre	3283	289	VEHICLES	08/03/1990	One-Off		
DC-02-A-06	INSURANCE COMPANIES, POOLE	DORSET	Edge of Town Centre	6080	399	VEHICLES	06/03/1990	One-Off		
DC-02-A-07	ELECTRICAL DESIGN, POOLE	DORSET	Suburban Area (PPS6 Out of Centre)	27900	1175	VEHICLES	04/11/1992	One-Off		
DC-02-A-08	OFFICE, DORCHESTER	DORSET	Edge of Town Centre	1550	121	MULTI-MODAL	03/07/2008	One-Off		
DH-02-A-01	RPMI OFFICES, DARLINGTON	DURHAM	Suburban Area (PPS6 Out of Centre)	3372	250	MULTI-MODAL	05/11/2010	One-Off		
DL-02-A-01	OFFICES, DUBLIN	DUBLIN	Neighbourhood Centre (PPS6 Local Centre)	3344	251	MULTI-MODAL	07/12/2009	One-Off		
DL-02-A-02	OFFICES, DUBLIN	DUBLIN	Neighbourhood Centre (PPS6 Local Centre)	1900	118	MULTI-MODAL	07/12/2009	One-Off		
DL-02-A-04	OFFICES, DUBLIN	DUBLIN	Edge of Town Centre	13827	0	MULTI-MODAL	20/05/2010	One-Off		
DN-02-A-01	ARCHITECTS, LETTERKENNY	DONEGAL	Edge of Town Centre	232	8	MULTI-MODAL	15/09/2009	One-Off		
DN-02-A-02	COUNCIL OFFICES, BUNCRANA	DONEGAL	Edge of Town Centre	400	11	MULTI-MODAL	28/06/2010	One-Off		
EB-02-A-01	FORESTRY COM., EDINBURGH	CITY OF EDINBURGH	Suburban Area (PPS6 Out of Centre)	7897	350	VEHICLES	27/10/1992	One-Off		
EB-02-A-02	CONSTRUCTION CO., EDINBURGH	CITY OF EDINBURGH	Edge of Town	2787	200	VEHICLES	14/10/1992	One-Off		
EB-02-A-03	OFFICES, EDINBURGH	CITY OF EDINBURGH	Edge of Town	929	55	VEHICLES	22/10/1992	One-Off		
EB-02-A-04	OFFICES, EDINBURGH	CITY OF EDINBURGH	Edge of Town	1394	70	VEHICLES	22/10/1992	One-Off		
EB-02-A-05	SOFTWARE DESIGN, EDINBURGH	CITY OF EDINBURGH	Edge of Town	1858	80	VEHICLES	22/10/1992	One-Off		
EG-02-A-01	ELECTRICAL CO., EALING	EALING	Suburban Area (PPS6 Out of Centre)	2877	168	VEHICLES	18/07/1991	One-Off		
EG-02-A-02	COMPUTING CO., EALING	EALING	Suburban Area (PPS6 Out of Centre)	6039	200	VEHICLES	25/06/1991	One-Off		
EG-02-A-03	HOLDING COMPANY, EALING	EALING	Suburban Area (PPS6 Out of Centre)	5633	125	VEHICLES	27/06/1991	One-Off		
EG-02-A-04	ELECTRICAL CO., EALING	EALING	Suburban Area (PPS6 Out of Centre)	929	45	VEHICLES	12/11/1991	One-Off		
EG-02-A-05	COMPUTING HQ, EALING	EALING	Suburban Area (PPS6 Out of Centre)	427	10	VEHICLES	21/11/1991	One-Off		
EG-02-A-06	SOFTWARE COMPANY, EALING	EALING	Suburban Area (PPS6 Out of Centre)	845	25	VEHICLES	21/11/1991	One-Off		
EG-02-A-07	FINANCIAL PLANNING, EALING	EALING	Suburban Area (PPS6 Out of Centre)	427	36	VEHICLES	21/11/1991	One-Off		
EG-02-A-08	OFFICE, EALING	EALING	Suburban Area (PPS6 Out of Centre)	3416	255	VEHICLES	21/11/1991	One-Off		
EG-02-A-09	CLOTHING RETAILER, EALING	EALING	Suburban Area (PPS6 Out of Centre)	1708	250	VEHICLES	21/11/1991	One-Off		
EG-02-A-10	COUNCIL OFFICES, EALING	EALING	Edge of Town Centre	4677	205	VEHICLES	26/03/1996	One-Off		
ES-02-A-01	CREDIT CARD CO., BRIGHTON	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	25929	1300	VEHICLES	24/05/1985	One-Off		
ES-02-A-02	CREDIT CARD CO., BRIGHTON	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	4916	300	VEHICLES	24/05/1985	One-Off		
ES-02-A-03	TELEPHONE CO., BRIGHTON	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	18240		VEHICLES	18/09/1984	One-Off		
ES-02-A-05	DENTAL BOARD, EASTBOURNE	EAST SUSSEX	Edge of Town	10000	1205	VEHICLES	03/11/1992	One-Off		
ES-02-A-06	LEGAL & GENERAL, HOVE	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	18675	2153	VEHICLES	29/11/2007	One-Off	Yes	
ES-02-A-07	DISTRICT COUNCIL, HAILSHAM	EAST SUSSEX	Edge of Town Centre	2855	236	MULTI-MODAL	31/03/2011	One-Off		Yes
EX-02-A-01	CREDIT CARD CO., BASILDON	ESSEX	Edge of Town	25469	1025	VEHICLES	05/11/1992	One-Off		
EX-02-A-02	TELEPHONE CO., BRENTWOOD	ESSEX	Edge of Town	19667	1200	MULTI-MODAL	05/04/2001	One-Off		
FA-02-A-01	COUNCIL OFFICES, FALKIRK	FALKIRK	Edge of Town Centre	14526	400	VEHICLES	13/08/1993	One-Off		
FI-02-A-01	CALL CENTRE, NR DUNFERMLINE	FIFE	Edge of Town	8361	1453	VEHICLES	19/03/1998	One-Off		
GC-02-A-01	CALL CENTRE, GLASGOW	GLASGOW CITY	Town Centre	10000	750	MULTI-MODAL	16/06/2008	One-Off		
GC-02-A-02	CALL CENTRE, GLASGOW	GLASGOW CITY	Town Centre	9000	1600	MULTI-MODAL	19/06/2008	One-Off		
GM-02-A-01	ELECTRICITY CO., BOLTON	GREATER MANCHESTER	Edge of Town	11958	850	VEHICLES	27/06/1990	One-Off		
GM-02-A-02	ELEC/COMPUTING, STOCKPORT	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	7491	350	VEHICLES	15/11/1990	One-Off		
GM-02-A-03	ELECTRONICS HQ, MANCHESTER	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	15000	528	VEHICLES	06/02/1992	One-Off		
GM-02-A-04	OFFICE CENTRE, MANCHESTER	GREATER MANCHESTER	Edge of Town	18208	700	VEHICLES	21/02/1994	One-Off		
GM-02-A-05	COURIER CO., BURY	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	686	47	VEHICLES	17/11/1995	One-Off		
GM-02-A-06	CO-OPERATIVE HQ, ROCHDALE	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	17500	800	VEHICLES	27/11/1996	One-Off		
HC-02-A-01	OFFICES, BASINGSTOKE	HAMPSHIRE	Edge of Town Centre	36500		VEHICLES	15/10/1985	Initial Survey		
HC-02-A-02	COMPUTING CO., NR EASTLEIGH	HAMPSHIRE	Neighbourhood Centre (PPS6 Local Centre)	65680	1900	VEHICLES	21/08/1986	One-Off		
HC-02-A-03	OFFICE COMPLEX, BASINGSTOKE	HAMPSHIRE	Edge of Town Centre	135750		VEHICLES	06/05/1986	Re-Survey		
HC-02-A-04	LIFE ASSURANCE, BASINGSTOKE	HAMPSHIRE	Edge of Town Centre	13900	650	VEHICLES	11/07/1989	One-Off		
HC-02-A-05	OFFICE, BASINGSTOKE	HAMPSHIRE	Edge of Town Centre	9400	530	VEHICLES	11/07/1989	One-Off		
HC-02-A-06	MOTORING ASSOC. HQ, B'STOKE	HAMPSHIRE	Edge of Town Centre	23600	1200	VEHICLES	11/07/1989	One-Off		
HC-02-A-07	COMPUTING CO., PORTSMOUTH	HAMPSHIRE	Suburban Area (PPS6 Out of Centre)	63174	2800	VEHICLES	30/04/1989	One-Off		
HC-02-A-08	DIY CO. HQ, CHANDLER'S FORD	HAMPSHIRE	Edge of Town	15975	1322	MULTI-MODAL	10/10/2005	Initial Survey	Yes	Yes
HC-02-A-09	ERICSON, BASINGSTOKE	HAMPSHIRE	Edge of Town	9000		VEHICLES	22/11/2007	One-Off		
HC-02-A-10	DIY CO. HQ, CHANDLER'S FORD	HAMPSHIRE	Edge of Town	15975	1322	MULTI-MODAL	20/10/2008	Re-Survey	Yes	Yes
HD-02-A-01	OFFICE, UXBRIDGE	HILLINGDON	Town Centre	12528	580	VEHICLES	13/07/1988	One-Off		
HD-02-A-02	OFFICE, HAYES	HILLINGDON	Edge of Town	3250	230	VEHICLES	11/07/1988	One-Off		
HD-02-A-03	OFFICE, LONGFORD	HILLINGDON	Suburban Area (PPS6 Out of Centre)	1021	60	VEHICLES	11/07/1988	One-Off		
HD-02-A-04	OFFICE, HILLINGDON	HILLINGDON	Neighbourhood Centre (PPS6 Local Centre)	1545	120	VEHICLES	15/07/1988	One-Off		
HD-02-A-05	OFFICE, RUISLIP	HILLINGDON	Suburban Area (PPS6 Out of Centre)	2653	135	VEHICLES	06/07/1988	One-Off		
HD-02-A-06	OFFICE, UXBRIDGE	HILLINGDON	Edge of Town	3760	130	VEHICLES	13/07/1989	One-Off		
HF-02-A-01	MOTOR CO., RICKMANSWORTH	HERTFORDSHIRE	Neighbourhood Centre (PPS6 Local Centre)	10964	270	VEHICLES	10/12/1992	One-Off		
HF-02-A-02	COUNCIL OFFICES, WELWYN GC	HERTFORDSHIRE	Suburban Area (PPS6 Out of Centre)	2700	123	MULTI-MODAL	05/09/2002	One-Off		
HI-02-A-01	OFFICE, INVERNESS	HIGHLAND	Edge of Town	804	49	MULTI-MODAL	20/05/2009	One-Off		
HI-02-A-02	DATA SCIENCE COMPANY, NAIRN	HIGHLAND	Edge of Town	929	100	MULTI-MODAL	09/05/2006	One-Off		
HI-02-A-03	OFFICE, INVERNESS	HIGHLAND	Edge of Town	5400	200	MULTI-MODAL	20/05/2009	One-Off		
IM-02-A-01	OFFICE, DOUGLAS	ISLE OF MAN	Suburban Area (PPS6 Out of Centre)	4000		VEHICLES	02/11/1989	One-Off		
IS-02-A-01	OFFICES, ISLINGTON	ISLINGTON	Suburban Area (PPS6 Out of Centre)	5500	315	MULTI-MODAL	24/10/2008	One-Off		
IW-02-A-01	ELECTRICAL CO., CARISBROOKE	ISLE OF WIGHT	Edge of Town	3391	105	VEHICLES	12/11/1992	One-Off		
KC-02-A-01	COUNTY HALL, MAIDSTONE	KENT	Edge of Town Centre	32793	2050	MULTI-MODAL	13/10/2005	Initial Survey	Yes	Yes
KC-02-A-03	COUNCIL OFFICES, MAIDSTONE	KENT	Edge of Town Centre	2900	383	MULTI-MODAL	16/10/2008	One-Off	Yes	Yes
KC-02-A-04	COUNCIL OFFICES, MAIDSTONE	KENT	Edge of Town Centre	1500	200	MULTI-MODAL	16/10/2008	One-Off	Yes	Yes
KC-02-A-05	COUNTY HALL, MAIDSTONE	KENT	Edge of Town Centre	32793	2139	MULTI-MODAL	16/10/2008	Re-Survey	Yes	Yes
KC-02-A-06	LAND REGISTRY,TBRDGE WELLS	KENT	Edge of Town	5677	200	MULTI-MODAL	01/12/2009	One-Off	Yes	
KK-02-A-01	GOV'MENT OFFICES, KILKENNY	KILKENNY	Suburban Area (PPS6 Out of Centre)	19500	330	MULTI-MODAL	25/11/2008	One-Off		
LC-02-A-01	SAVINGS CO., BLACKPOOL	LANCASHIRE	Edge of Town	14992	1033	VEHICLES	20/05/1991	One-Off		

LC-02-A-02	HALIFAX BS HQ, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	1663	37	VEHICLES	20/11/1991	One-Off	
LC-02-A-03	DSS OFFICES, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	3750	252	VEHICLES	26/11/1991	One-Off	
LC-02-A-04	HOUSING ASSOCIATION, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	3252	150	VEHICLES	26/11/1991	One-Off	
LC-02-A-05	CIVIL ENGINEERING, NR CHORLEY	LANCASHIRE	Free Standing (PPS6 Out of Town)	1859	92	VEHICLES	12/02/1992	One-Off	
LC-02-A-06	TOWN HALL, BLACKBURN	LANCASHIRE	Town Centre	11225	670	MULTI-MODAL	17/06/2004	One-Off	
LC-02-A-07	COUNCIL OFFICES, BLACKPOOL	LANCASHIRE	Edge of Town	6678	25	MULTI-MODAL	13/05/2005	One-Off	
LC-02-A-08	COUNCIL OFFICES, CHORLEY	LANCASHIRE	Edge of Town Centre	2000	184	MULTI-MODAL	13/06/2006	One-Off	
LE-02-A-01	COUNCIL OFFICES, M. MOWBRAY	LEICESTERSHIRE	Suburban Area (PPS6 Out of Centre)	3251	276	MULTI-MODAL	29/06/2000	Initial Survey	
LE-02-A-02	COUNCIL OFF., LOUGHBOROUGH	LEICESTERSHIRE	Town Centre	6913	390	VEHICLES	30/11/2000	One-Off	
LE-02-A-03	COUNCIL OFFICES, M. MOWBRAY	LEICESTERSHIRE	Suburban Area (PPS6 Out of Centre)	3251	225	MULTI-MODAL	04/05/2005	Re-Survey	
MR-02-A-01	OFFICE, WIMBLEDON	MERTON	Edge of Town Centre	1548	85	VEHICLES	10/09/2009	One-Off	
MR-02-A-02	OFFICES, WIMBELDON	MERTON	Town Centre	1548	85	VEHICLES	10/09/2009	One-Off	
MS-02-A-01	OFFICES, LIVERPOOL	MERSEYSIDE	Town Centre	9000	200	MULTI-MODAL	19/06/2007	One-Off	
MT-02-A-01	OFFICE, MERTHYR TYDFIL	MERTHYR TYDFIL	Edge of Town	5950	730	VEHICLES	05/10/2007	One-Off	
NF-02-A-01	COUNCIL OFFICE, KING'S LYNN	NORFOLK	Edge of Town Centre	5500	408	MULTI-MODAL	30/09/2010	One-Off	Yes
OX-02-A-01	COUNCIL OFFICES, OXFORD	OXFORDSHIRE	Edge of Town Centre	2633	271	MULTI-MODAL	20/06/2002	One-Off	
PK-02-A-01	COUNCIL OFFICES, PERTH	PERTH & KINROSS	Town Centre	1020	70	VEHICLES	26/05/1998	One-Off	
PK-02-A-02	COUNCIL OFFICES, PERTH	PERTH & KINROSS	Town Centre	1020	66	VEHICLES	26/05/1998	One-Off	
RE-02-A-01	COUNCIL OFFICES, READING	READING	Edge of Town	43460		VEHICLES	03/12/1995	One-Off	
RO-02-A-01	COUNCIL OFFICES, ROSCOMMON	ROSCOMMON	Edge of Town Centre	531	17	MULTI-MODAL	08/05/2009	One-Off	
SC-02-A-01	OFFICE, WOKING	SURREY	Town Centre	5400	380	VEHICLES	17/02/1987	One-Off	
SC-02-A-02	OFFICE COMPLEX, CLAYGATE	SURREY	Suburban Area (PPS6 Out of Centre)	5574	240	VEHICLES	02/03/1989	Initial Survey	
SC-02-A-03	INSURANCE CO., KINGSWOOD	SURREY	Suburban Area (PPS6 Out of Centre)	19019	1700	VEHICLES	23/02/1989	Initial Survey	
SC-02-A-04	LIFE ASSURANCE, DORKING	SURREY	Edge of Town	5110	420	VEHICLES	23/02/1989	One-Off	
SC-02-A-05	INSURANCE COMPANY, DORKING	SURREY	Edge of Town	13275	894	VEHICLES	07/02/1989	One-Off	
SC-02-A-06	OFFICE, EPSOM	SURREY	Town Centre	5400	325	VEHICLES	11/02/1987	One-Off	
SC-02-A-07	COUNCIL OFFICES, WEST EWELL	SURREY	Edge of Town Centre	2943	240	VEHICLES	04/11/1992	One-Off	
SC-02-A-08	INSURANCE CO., KINGSWOOD	SURREY	Suburban Area (PPS6 Out of Centre)	25657	1700	VEHICLES	29/06/1995	Re-Survey	
SC-02-A-09	FOOD MANUFACTURER,CLAYGATE	SURREY	Suburban Area (PPS6 Out of Centre)	5574	320	VEHICLES	09/10/1997	Re-Survey	
SC-02-A-10	GOVERNMENT OFFICE,GUILDFORD	SURREY	Town Centre	4312	280	MULTI-MODAL	19/06/2001	One-Off	
SC-02-A-11	COUNCIL OFFICES, GUILDFORD	SURREY	Edge of Town	1075	118	VEHICLES	10/10/2000	One-Off	
SC-02-A-12	PHARMACEUTICALS, WEYBRIDGE	SURREY	Suburban Area (PPS6 Out of Centre)	10293	345	MULTI-MODAL	18/10/2005	Initial Survey	Yes Yes
SC-02-A-13	PHARMACEUTICALS, WEYBRIDGE	SURREY	Suburban Area (PPS6 Out of Centre)	10293	325	MULTI-MODAL	21/10/2008	Re-Survey	Yes Yes
SC-02-A-14	UNILEVER, LEATHERHEAD	SURREY	Edge of Town	19974	1450	MULTI-MODAL	10/03/2009	One-Off	Yes Yes
SC-02-A-15	ACCOUNTANTS, GUILDFORD	SURREY	Suburban Area (PPS6 Out of Centre)	1896	140	MULTI-MODAL	05/10/2010	One-Off	
SF-02-A-01	COUNCIL OFFICES, BURY ST. ED.	SUFFOLK	Suburban Area (PPS6 Out of Centre)	8000	700	MULTI-MODAL	27/09/2010	One-Off	Yes
SK-02-A-01	GLA HQ, SOUTHWARK	SOUTHWARK	Town Centre	17187	650	MULTI-MODAL	21/10/2008	One-Off	Yes
SK-02-A-02	OFFICES, ROTHERHITHE	SOUTHWARK	Edge of Town Centre	2371	145	MULTI-MODAL	20/10/2008	One-Off	
SR-02-A-01	COUNCIL OFFICES, STIRLING	STIRLING	Town Centre	13057	800	VEHICLES	09/06/1995	One-Off	
TV-02-A-01	INLAND REVENUE, MIDDLESBRGH	TEES VALLEY	Edge of Town Centre	4100	200	MULTI-MODAL	25/09/2001	One-Off	
TV-02-A-02	BUILDING SOCIETY, DARLINGTON	TEES VALLEY	Edge of Town	3500	90	VEHICLES	25/04/2005	One-Off	
TW-02-A-01	RADIO STUDIOS, GATESHEAD	TYNE & WEAR	Edge of Town Centre	645	55	MULTI-MODAL	04/05/2005	One-Off	
TW-02-A-02	UNION OFFICES, NEWCASTLE	TYNE & WEAR	Town Centre	1675	84	MULTI-MODAL	03/05/2005	One-Off	
TW-02-A-03	DEVELOP. AGENCY, NEWCASTLE	TYNE & WEAR	Edge of Town	6480	446	MULTI-MODAL	11/12/2008	One-Off	
TW-02-A-04	HOUSING CO., GATESHEAD	TYNE & WEAR	Edge of Town	2500	180	MULTI-MODAL	29/09/2009	One-Off	
TW-02-A-05	TELEVISION CO., GATESHEAD	TYNE & WEAR	Suburban Area (PPS6 Out of Centre)	1500	170	MULTI-MODAL	29/09/2009	One-Off	
TW-02-A-06	GOVT OFFICES, NEWCASTLE	TYNE & WEAR	Suburban Area (PPS6 Out of Centre)	70291	9500	MULTI-MODAL	25/11/2009	One-Off	Yes
WH-02-A-01	IT COMPANY, PUTNEY	WANDSWORTH	Edge of Town Centre	5500	240	MULTI-MODAL	28/06/2002	One-Off	
WM-02-A-01	COUNCIL OFFICES, STOURBRIDGE	WEST MIDLANDS	Suburban Area (PPS6 Out of Centre)	2725	148	MULTI-MODAL	26/04/2006	One-Off	Yes
WM-02-A-02	BRITISH TELECOM, BIRMINGHAM	WEST MIDLANDS	Edge of Town Centre	12200	500	MULTI-MODAL	27/11/2008	One-Off	
WM-02-A-03	BANK ADMIN, BIRMINGHAM	WEST MIDLANDS	Town Centre	8200	850	MULTI-MODAL	27/11/2008	One-Off	
WR-02-A-01	COUNCIL OFFICES, WREXHAM	WREXHAM	Town Centre	2500	120	MULTI-MODAL	05/07/2004	One-Off	
WS-02-A-01	BUILDING SOCIETY, WORTHING	WEST SUSSEX	Not Known	9200	345	VEHICLES	22/05/1990	One-Off	
WS-02-A-02	WATER COMPANY, WORTHING	WEST SUSSEX	Edge of Town	6502	423	VEHICLES	22/10/1992	Initial Survey	
WS-02-A-03	INSURANCE CO., WORTHING	WEST SUSSEX	Edge of Town	13933	1050	VEHICLES	13/01/2000	One-Off	
WS-02-A-04	WATER COMPANY, WORTHING	WEST SUSSEX	Edge of Town	6502	562	VEHICLES	06/12/2000	Re-Survey	
WY-02-A-01	CALL CENTRE, BRADFORD	WEST YORKSHIRE	Edge of Town Centre	2400	214	MULTI-MODAL	09/05/2005	One-Off	
WY-02-A-02	HOUSING ASSOC., BRADFORD	WEST YORKSHIRE	Edge of Town Centre		73	MULTI-MODAL	17/05/2005	One-Off	
WY-02-A-03	OFFICE, LEEDS	WEST YORKSHIRE	Suburban Area (PPS6 Out of Centre)	2696	243	MULTI-MODAL	17/06/2010	One-Off	

Vehicle Only Surveys
Prior to 2003
Town Centre
Location
Size below 2500sqm or above 35000sqm
Initial Survey
No GFA

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : A - OFFICE

MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
	HC	HAMPSHIRE	1 days
	KC	KENT	3 days
	SC	SURREY	2 days
03	**SOUTH WEST**		
	CW	CORNWALL	3 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	2 days
	NF	NORFOLK	1 days
	SF	SUFFOLK	1 days
05	**EAST MIDLANDS**		
	LE	LEICESTERSHIRE	1 days
06	**WEST MIDLANDS**		
	WM	WEST MIDLANDS	2 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	LC	LANCASHIRE	1 days
09	**NORTH**		
	DH	DURHAM	1 days
	TW	TYNE & WEAR	2 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 2500 to 32793 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 31/03/11

Selected survey days:

Monday	3 days
Tuesday	4 days
Wednesday	2 days
Thursday	10 days
Friday	3 days

Selected survey types:

Manual count	22 days
Directional ATC Count	0 days

Selected Locations:

Edge of Town Centre	7
Suburban Area (PPS6 Out of Centre)	8
Edge of Town	7

Selected Location Sub Categories:

Industrial Zone	2
Commercial Zone	4
Residential Zone	6
Built-Up Zone	6
No Sub Category	4

LIST OF SITES relevant to selection parameters

1 **CA-02-A-02** **SUGAR HQ, PETERBOROUGH** **CAMBRIDGESHIRE**
OUNDLE ROAD

PETERBOROUGH
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 12500 sqm

2 **CA-02-A-03** **OFFICE, PETERBOROUGH** **CAMBRIDGESHIRE**
NEW ROAD

PETERBOROUGH
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 5750 sqm

3 **CW-02-A-01** **COUNCIL OFFICES, CAMBORNE** **CORNWALL**
DOLCOATH AVENUE

CAMBORNE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 5400 sqm

4 **CW-02-A-02** **INLAND REVENUE, ST AUSTELL** **CORNWALL**
TRINITY STREET

ST AUSTELL
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 4850 sqm

5 **CW-02-A-03** **COUNCIL OFFICES, TRURO** **CORNWALL**
A390 TREYEW ROAD

TRURO
Edge of Town
No Sub Category
Total Gross floor area: 30000 sqm

6 **DH-02-A-01** **RPMI OFFICES, DARLINGTON** **DURHAM**
BRINKBURN ROAD

DARLINGTON
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 3372 sqm

7 **ES-02-A-07** **DISTRICT COUNCIL, HAILSHAM** **EAST SUSSEX**
VICARAGE LANE

HAILSHAM
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2855 sqm

8 **HC-02-A-10** **DIY CO. HQ, CHANDLER'S FORD** **HAMPSHIRE**
TEMPLAR'S WAY
HAMPSHIRE CORP. PARK
CHANDLER'S FORD
Edge of Town
Commercial Zone
Total Gross floor area: 15975 sqm

9 **KC-02-A-03** **COUNCIL OFFICES, MAIDSTONE** **KENT**
SANDLING ROAD

MAIDSTONE
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 2900 sqm

LIST OF SITES relevant to selection parameters (Cont.)

10 **KC-02-A-05** **COUNTY HALL, MAIDSTONE** **KENT**
SANDLING ROAD

MAIDSTONE
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 32793 sqm

11 **KC-02-A-06** **LAND REGISTRY,TBRDGE WELLS** **KENT**
FOREST ROAD
CAMDEN PARK
TUNBRIDGE WELLS
Edge of Town
Residential Zone
Total Gross floor area: 5677 sqm

12 **LC-02-A-07** **COUNCIL OFFICES, BLACKPOOL** **LANCASHIRE**
SOUTH PROMENADE
SAINT ANNES
BLACKPOOL
Edge of Town
No Sub Category
Total Gross floor area: 6678 sqm

13 **LE-02-A-03** **COUNCIL OFFICES, M. MOWBRAY** **LEICESTERSHIRE**
NOTTINGHAM ROAD

MELTON MOWBRAY
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 3251 sqm

14 **NF-02-A-01** **COUNCIL OFFICE, KING'S LYNN** **NORFOLK**
CHAPEL STREET

KING'S LYNN
Edge of Town Centre
Built-Up Zone
Total Gross floor area: 5500 sqm

15 **SC-02-A-13** **PHARMACEUTICALS, WEYBRIDGE** **SURREY**
ST GEORGE'S AVENUE
THE HEATH
WEYBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 10293 sqm

16 **SC-02-A-14** **UNILEVER, LEATHERHEAD** **SURREY**
SPRINGFIELD DRIVE

LEATHERHEAD
Edge of Town
Commercial Zone
Total Gross floor area: 19974 sqm

17 **SF-02-A-01** **COUNCIL OFFICES, BURY ST. ED.** **SUFFOLK**
BEETONS WAY

BURY ST. EDMUNDS
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 8000 sqm

18 **TW-02-A-03** **DEVELOP. AGENCY, NEWCASTLE** **TYNE & WEAR**
KINGFISHER BOULEVARD
LEMINGTON
NEWCASTLE UPON TYNE
Edge of Town
Commercial Zone
Total Gross floor area: 6480 sqm

LIST OF SITES relevant to selection parameters (Cont.)

19 **TW-02-A-04** **HOUSING CO., GATESHEAD** **TYNE & WEAR**
EARLSWAY
TEAM VALLEY TRAD. EST.
GATESHEAD
Edge of Town
Industrial Zone
Total Gross floor area: 2500 sqm

20 **WM-02-A-01** **COUNCIL OFFICES, STOURBRIDGE** **WEST MIDLANDS**
A451 NORTON ROAD
MARY STEVENS PARK
STOURBRIDGE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 2725 sqm

21 **WM-02-A-02** **BRITISH TELECOM, BIRMINGHAM** **WEST MIDLANDS**
BRINDLEY PLACE

BIRMINGHAM
Edge of Town Centre
Commercial Zone
Total Gross floor area: 12200 sqm

22 **WY-02-A-03** **OFFICE, LEEDS** **WEST YORKSHIRE**
VICTORIA ROAD
HEADINGLEY
LEEDS
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 2696 sqm

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	1	19974	0.020	1	19974	0.010	1	19974	0.030
06:00 - 07:00	1	19974	0.175	1	19974	0.030	1	19974	0.205
07:00 - 08:00	22	9199	0.583	22	9199	0.076	22	9199	0.659
08:00 - 09:00	**22**	**9199**	**1.622**	22	9199	0.201	**22**	**9199**	**1.823**
09:00 - 10:00	22	9199	0.877	22	9199	0.259	22	9199	1.136
10:00 - 11:00	22	9199	0.351	22	9199	0.282	22	9199	0.633
11:00 - 12:00	22	9199	0.284	22	9199	0.281	22	9199	0.565
12:00 - 13:00	22	9199	0.315	22	9199	0.457	22	9199	0.772
13:00 - 14:00	22	9199	0.421	22	9199	0.365	22	9199	0.786
14:00 - 15:00	22	9199	0.310	22	9199	0.328	22	9199	0.638
15:00 - 16:00	22	9199	0.259	22	9199	0.397	22	9199	0.656
16:00 - 17:00	22	9199	0.221	22	9199	0.978	22	9199	1.199
17:00 - 18:00	22	9199	0.151	**22**	**9199**	**1.319**	22	9199	1.470
18:00 - 19:00	22	9199	0.050	22	9199	0.400	22	9199	0.450
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			5.639			5.383			11.022

Parameter summary

Trip rate parameter range selected:	2500 - 32793 (units: sqm)
Survey date date range:	01/01/03 - 31/03/11
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	11

TRIP RATE for Land Use 02 - EMPLOYMENT/A - OFFICE

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	1	19974	0.035	1	19974	0.015	1	19974	0.050
06:00 - 07:00	1	19974	0.250	1	19974	0.035	1	19974	0.285
07:00 - 08:00	22	9199	0.775	22	9199	0.062	22	9199	0.837
08:00 - 09:00	**22**	**9199**	**2.278**	22	9199	0.195	**22**	**9199**	**2.473**
09:00 - 10:00	22	9199	1.242	22	9199	0.361	22	9199	1.603
10:00 - 11:00	22	9199	0.563	22	9199	0.449	22	9199	1.012
11:00 - 12:00	22	9199	0.475	22	9199	0.487	22	9199	0.962
12:00 - 13:00	22	9199	0.818	22	9199	1.225	22	9199	2.043
13:00 - 14:00	22	9199	1.115	22	9199	0.909	22	9199	2.024
14:00 - 15:00	22	9199	0.694	22	9199	0.567	22	9199	1.261
15:00 - 16:00	22	9199	0.389	22	9199	0.610	22	9199	0.999
16:00 - 17:00	22	9199	0.302	22	9199	1.437	22	9199	1.739
17:00 - 18:00	22	9199	0.150	**22**	**9199**	**1.889**	22	9199	2.039
18:00 - 19:00	22	9199	0.053	22	9199	0.534	22	9199	0.587
19:00 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			9.139			8.775			17.914

Parameter summary

Trip rate parameter range selected:	2500 - 32793 (units: sqm)
Survey date date range:	01/01/03 - 31/03/11
Number of weekdays (Monday-Friday):	22
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	11

Employment Trip Generation

B1c/B2 Industry Site Selection

Reference	Description	Area	Location	SITE AREA	GFA	SPACES	EMPLOY	Survey Type	Most Recent Survey	Status	Travel Plan	SAM
AR-02-D-01	INDUSTRIAL ESTATE, ARMAGH	ARMAGH	Edge of Town	5.37	11548	191	139	MULTI-MODAL	08/06/2010	One-Off		
BG-02-D-01	INDUSTRIAL ESTATE, BRIDGEND	BRIDGEND	Edge of Town		15517		5068	VEHICLES	20/10/1983	One-Off		
BG-02-D-02	INDUSTRIAL ESTATE, BRIDGEND	BRIDGEND	Edge of Town		27359		743	VEHICLES	19/10/1983	One-Off		
BR-02-D-01	PACKAGING COMPANY, BRISTOL	BRISTOL CITY	Edge of Town		9070		130	VEHICLES	15/09/1992	One-Off		
BR-02-D-02	INDUSTRIAL ESTATE, BRISTOL	BRISTOL CITY	Suburban Area (PPS6 Out of Centre)	0.94	6000	127	160	MULTI-MODAL	19/11/2009	One-Off		
BR-02-D-03	INDUSTRIAL ESTATE, BRISTOL	BRISTOL CITY	Suburban Area (PPS6 Out of Centre)	1.7	6000	193	200	MULTI-MODAL	20/10/2009	One-Off		
CA-02-D-01	IND. ESTATE, PETERBOROUGH	CAMBRIDGESHIRE	Suburban Area (PPS6 Out of Centre)	0.8	4300	75	107	MULTI-MODAL	13/05/2008	One-Off		
CA-02-D-02	IND. ESTATE, CAMBRIDGE	CAMBRIDGESHIRE	Edge of Town	0.58	2063	69	47	MULTI-MODAL	19/10/2009	One-Off		
CA-02-D-03	IND. ESTATE, PETERBOROUGH	CAMBRIDGESHIRE	Suburban Area (PPS6 Out of Centre)	1.47	4425	157	63	MULTI-MODAL	22/10/2009	One-Off		
CB-02-D-01	INDUSTRIAL ESTATE,SALTERBECK	CUMBRIA	Edge of Town		33662		888	VEHICLES	05/10/1983	One-Off		
CB-02-D-02	IND.EST, SOLWAY-MARYPORT	CUMBRIA	Not Known		23267		288	VEHICLES	05/10/1983	One-Off		
CB-02-D-03	INDUSTRIAL ESTATE, BRAMPTON	CUMBRIA	Edge of Town	8.4	13700	311	219	MULTI-MODAL	23/06/2005	Initial Survey		
CB-02-D-04	INDUSTRIAL ESTATE, BRAMPTON	CUMBRIA	Edge of Town	9.11	17708	374	146	MULTI-MODAL	16/12/2009	Re-Survey		
CF-02-D-01	INDUSTRIAL ESTATE, CARDIFF	CARDIFF	Suburban Area (PPS6 Out of Centre)	1.9	36232		95	VEHICLES	31/10/1983	One-Off		
CH-02-D-01	INDUSTRIAL ESTATE,MIDDLEWICH	CHESHIRE	Edge of Town	4.5	12339	258	292	VEHICLES	19/10/1989	One-Off		
CH-02-D-02	INDUSTRIAL EST., NORTHWICH	CHESHIRE	Edge of Town	5	22000	257	453	MULTI-MODAL	15/06/2007	One-Off		
CM-02-D-01	INDUSTRIAL ESTATE, PONTHENRI	CARMARTHENSHIRE	Free Standing (PPS6 Out of Town)	3.1	1894		22	VEHICLES	18/10/1983	One-Off		
CM-02-D-02	WORKSHOPS, AMMANFORD	CARMARTHENSHIRE	Edge of Town Centre	1.8	2900	150	72	MULTI-MODAL	07/09/2008	One-Off		
CP-02-D-01	INDUSTRIAL ESTATE, RASSAU	CAERPHILLY	Free Standing (PPS6 Out of Town)	84.3	36464		721	VEHICLES	13/10/1983	One-Off		
CW-02-D-01	INDUSTRIAL ESTATE, NEWQUAY	CORNWALL	Edge of Town		41246		866	VEHICLES	02/11/1983	One-Off		
CW-02-D-02	INDUSTRIAL ESTATE, CAMBORNE	CORNWALL	Edge of Town	4.72	6515	175	0	MULTI-MODAL	21/09/2007	One-Off		
DC-02-D-01	INDUSTRIAL EST., NR FERNDOWN	DORSET	Free Standing (PPS6 Out of Town)	52	80421		1800	VEHICLES	31/03/1982	Initial Survey		
DC-02-D-12	INDUSTRIAL EST., NR VERWOOD	DORSET	Free Standing (PPS6 Out of Town)	11.6	23934	920	874	VEHICLES	21/11/1995	One-Off		
DC-02-D-13	INDUSTRIAL EST.,BOURNEMOUTH	DORSET	Edge of Town	1.6	4400	120	50	VEHICLES	13/09/1988	One-Off		
DC-02-D-14	INDUSTRIAL EST., NR WIMBORNE	DORSET	Free Standing (PPS6 Out of Town)	7.6	31000		100	VEHICLES	31/01/1990	One-Off		
DC-02-D-15	INDUSTRIAL ESTATE,NEAR POOLE	DORSET	Edge of Town	8	29838	510	377	VEHICLES	15/11/1995	One-Off		
DC-02-D-16	INDUSTRIAL ESTATE, SANDFORD	DORSET	Neighbourhood Centre (PPS6 Local Centre)	16.6	52611	800	778	VEHICLES	14/11/1995	One-Off		
DC-02-D-17	INDUSTRIAL ESTATE, FERNDOWN	DORSET	Free Standing (PPS6 Out of Town)	3.6	21843	191	302	VEHICLES	16/11/1995	One-Off		
DC-02-D-18	INDUSTRIAL EST.,CHRISTCHURCH	DORSET	Suburban Area (PPS6 Out of Centre)	11.3	39459	1035	930	VEHICLES	22/11/1995	One-Off		
DC-02-D-19	INDUSTRIAL EST., NR WIMBORNE	DORSET	Edge of Town	2.8	6660	143	177	VEHICLES	07/05/1998	One-Off		
DG-02-D-01	BUSINESS PARK, NEAR DUMFRIES	DUMFRIES & GALLOWAY	Edge of Town	8.6	5980	292	36	VEHICLES	11/07/1999	One-Off		
DH-02-D-01	INDUSTRIAL ESTATE,NR CONSETT	DURHAM	Free Standing (PPS6 Out of Town)	23.6	12025	212	161	VEHICLES	27/04/2005	One-Off		
DL-02-D-01	INDUSTRIAL ESTATE, DUBLIN	DUBLIN	Edge of Town	23	83000	1165	1300	VEHICLES	16/07/2003	One-Off		
DL-02-D-02	INDUSTRIAL ESTATE, DUBLIN	DUBLIN	Edge of Town	33.3	100000	895	1500	VEHICLES	15/07/2003	One-Off		
DL-02-D-03	INDUSTRIAL ESTATE, DUBLIN	DUBLIN	Suburban Area (PPS6 Out of Centre)	35.7	120000		0	MULTI-MODAL	26/06/2007	One-Off		
DS-02-D-01	IND. ESTATE,SOUTH NORMANTON	DERBYSHIRE	Edge of Town	49.4	92286	1320	844	VEHICLES	15/06/2004	One-Off		
DU-02-D-01	INDUSTRIAL ESTATE, DUNDEE	DUNDEE CITY	Edge of Town		21324		554	VEHICLES	16/09/1983	One-Off		
DV-02-D-01	INDUSTRIAL EST.,NEWTON ABBOT	DEVON	Edge of Town	0.6	1465	66	35	VEHICLES	18/07/1991	One-Off		
DV-02-D-02	INDUSTRIAL ESTATE, LAPFORD	DEVON	Free Standing (PPS6 Out of Town)	0.6	1682	40	25	VEHICLES	01/08/1991	One-Off		
DV-02-D-03	INDUSTRIAL ESTATE, EXETER	DEVON	Edge of Town	1	708	75	55	VEHICLES	01/08/1991	One-Off		
DV-02-D-04	INDUSTRIAL EST., OKEHAMPTON	DEVON	Edge of Town	1		55	85	VEHICLES	01/08/1991	One-Off		
DV-02-D-05	INDUSTRIAL ESTATE, TIVERTON	DEVON	Edge of Town	2	7500	190	0	VEHICLES	16/11/1991	One-Off		
EA-02-D-01	INDUSTRIAL ESTATE, CUMNOCK	EAST AYRSHIRE	Not Known		38817		139	VEHICLES	08/09/1983	One-Off		
EA-02-D-02	INDUSTRIAL EST., KILMARNOCK	EAST AYRSHIRE	Edge of Town Centre	0.7	552	60	54	MULTI-MODAL	11/06/2008	One-Off		
EB-02-D-01	INDUSTRIAL ESTATE, EDINBURGH	CITY OF EDINBURGH	Edge of Town	1	3154	77	0	VEHICLES	16/10/1992	One-Off		
ED-02-D-01	INDUSTRIAL ESTATE, CLYDEBANK	EAST DUNBARTONSHIRE	Edge of Town		17053		299	VEHICLES	22/09/1983	One-Off		
EG-02-D-01	LINEN SUPPLIERS, SOUTHALL	EALING	Suburban Area (PPS6 Out of Centre)	0.8	6434	65	360	VEHICLES	05/12/1991	One-Off		
ER-02-D-01	INDUSTRIAL ESTATE, BARRHEAD	EAST RENFREWSHIRE	Suburban Area (PPS6 Out of Centre)	4.15	7211	112	160	MULTI-MODAL	19/09/2001	One-Off		
ER-02-D-02	INDUSTRIAL EST.,NEAR GLASGOW	EAST RENFREWSHIRE	Edge of Town	2.48	4233	93	151	MULTI-MODAL	10/10/2001	One-Off		
ES-02-D-01	INDUSTRIAL ESTATE, BRIGHTON	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	1.5	13300		0	VEHICLES	01/05/1984	One-Off		
ES-02-D-02	INDUSTRIAL ESTATE, LEWES	EAST SUSSEX	Edge of Town		7500		0	VEHICLES	20/05/1987	One-Off		
ES-02-D-03	INDUSTRIAL ESTATE, BRIGHTON	EAST SUSSEX	Suburban Area (PPS6 Out of Centre)	1.5	2866		0	VEHICLES	07/05/1987	One-Off		
ES-02-D-04	IND. ESTATE, NEAR HASTINGS	EAST SUSSEX	Neighbourhood Centre (PPS6 Local Centre)	0.75	2016	168	119	VEHICLES	13/06/2001	One-Off		
ES-02-D-05	IND. ESTATE, EASTBOURNE	EAST SUSSEX	Edge of Town	2.31	7525	193	150	MULTI-MODAL	30/11/2009	One-Off		
EX-02-D-01	INDUSTRIAL ESTATE, LOUGHTON	ESSEX	Edge of Town	3.58	27687	512	0	VEHICLES	22/11/2007	One-Off		
FA-02-D-01	INDUSTRIAL EST., NEAR FALKIRK	FALKIRK	Edge of Town	27.1	74425		1083	VEHICLES	07/09/1993	One-Off		
FS-02-D-01	INDUSTRIAL ESTATE, SHOTTON	FLINTSHIRE	Edge of Town	182.8	234115		538	VEHICLES	12/10/1983	One-Off		
FS-02-D-02	INDUSTRIAL EST., MANOR FLINT	FLINTSHIRE	Not Known	7.7	9755		279	VEHICLES	10/10/1983	One-Off		
GM-02-D-01	INDUSTRIAL ESTATE, OLDHAM	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	2.5	8285	200	350	VEHICLES	07/11/1990	One-Off		
GM-02-D-02	INDUSTRIAL ESTATE, WIGAN	GREATER MANCHESTER	Edge of Town	4.2	31500		600	VEHICLES	21/11/1990	One-Off		
GM-02-D-03	INDUSTRIAL ESTATE, BOLTON	GREATER MANCHESTER	Edge of Town	6.2	19487		400	VEHICLES	07/02/1991	One-Off		
GM-02-D-04	INDUSTRIAL ESTATE, ASHTON	GREATER MANCHESTER	Edge of Town	42.5	116566		2439	VEHICLES	01/08/1991	One-Off		
GM-02-D-05	INDUSTRIAL ESTATE,NEAR WIGAN	GREATER MANCHESTER	Edge of Town	30	21508		0	VEHICLES	25/02/1991	One-Off		
GM-02-D-06	INDUSTRIAL EST., MANCHESTER	GREATER MANCHESTER	Suburban Area (PPS6 Out of Centre)	2.9	29264	156	220	VEHICLES	05/11/1993	One-Off		
HC-02-D-01	INDUSTRIAL ESTATE, FAREHAM	HAMPSHIRE	Edge of Town	5	21091		0	VEHICLES	08/04/1987	One-Off		
HC-02-D-02	INDUSTRIAL EST., NEAR FAREHAM	HAMPSHIRE	Suburban Area (PPS6 Out of Centre)	2.2	9691	226	0	VEHICLES	13/06/1989	One-Off		
HD-02-D-01	INDUSTRIAL ESTATE, HAYES	HILLINGDON	Suburban Area (PPS6 Out of Centre)		3880	65	135	VEHICLES	07/07/1988	One-Off		
HI-02-D-01	INDUSTRIAL ESTATE, INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		20125		0	VEHICLES	28/07/1991	One-Off		
HI-02-D-02	INDUSTRIAL ESTATE, INVERNESS	HIGHLAND	Suburban Area (PPS6 Out of Centre)		13938		0	VEHICLES	01/08/1991	One-Off		
HI-02-D-03	IND. EST./BUS.PK., FT. WILLIAM	HIGHLAND	Edge of Town	10	35000	390	250	MULTI-MODAL	18/05/2009	One-Off		
IC-02-D-01	INDUSTRIAL ESTATE, GLASGOW	INVERCLYDE	Suburban Area (PPS6 Out of Centre)		46014		1416	VEHICLES	20/09/1983	One-Off		
IM-02-D-01	INDUSTRIAL ESTATE, DOUGLAS	ISLE OF MAN	Edge of Town		18700		0	VEHICLES	02/11/1989	One-Off		
KC-02-D-01	INDUSTRIAL EST., WHITSTABLE	KENT	Edge of Town	15	12689	151	327	VEHICLES	03/12/1992	One-Off		
KH-02-D-01	INDUSTRIAL ESTATE, HULL	KINGSTON UPON HULL	Suburban Area (PPS6 Out of Centre)		6167		161	VEHICLES	28/09/1983	One-Off		
KH-02-D-02	INDUSTRIAL ESTATE, HULL	KINGSTON UPON HULL	Edge of Town	0.86	2220	28	118	MULTI-MODAL	18/10/2001	One-Off		
LC-02-D-01	INDUSTRIAL ESTATE, BURNLEY	LANCASHIRE	Edge of Town	19.4	48308		1500	VEHICLES	24/04/1989	One-Off		
LC-02-D-02	INDUSTRIAL ESTATE, BLACKPOOL	LANCASHIRE	Edge of Town	8.3	16966	411	295	VEHICLES	05/12/1993	One-Off		
LC-02-D-03	INDUSTRIAL ESTATE, NELSON	LANCASHIRE	Edge of Town	18.6	57429		2089	VEHICLES	24/10/1993	One-Off		
LC-02-D-04	INDUSTRIAL ESTATE, GARSTANG	LANCASHIRE	Edge of Town	3.4	4555	119	98	MULTI-MODAL	16/06/2006	One-Off		
LN-02-D-01	INDUSTRIAL ESTATE, GRANTHAM	LINCOLNSHIRE	Suburban Area (PPS6 Out of Centre)	1.6	5347	80	100	MULTI-MODAL	12/05/2005	One-Off		
MS-02-D-01	INDUSTRIAL EST., BIRKENHEAD	MERSEYSIDE	Not Known		4965		177	VEHICLES	22/10/1983	One-Off		
MS-02-D-02	INDUSTRIAL ESTATE, KNOWSLEY	MERSEYSIDE	Not Known		25098		474	VEHICLES	26/10/1983	One-Off		
MS-02-D-03	INDUSTRIAL EST., LAMBERHEAD	MERSEYSIDE	Edge of Town		9835		145	VEHICLES	20/09/1983	One-Off		
MS-02-D-04	INDUSTRIAL ESTATE, ST.HELENS	MERSEYSIDE	Suburban Area (PPS6 Out of Centre)		26398		1274	VEHICLES	12/10/1983	One-Off		
MS-02-D-05	INDUSTRIAL ESTATE, ST HELENS	MERSEYSIDE	Edge of Town	1.17	2430		0	MULTI-MODAL	18/10/2005	One-Off		
MS-02-D-06	INDUSTRIAL EST., LIVERPOOL	MERSEYSIDE	Neighbourhood Centre (PPS6 Local Centre)	1.23	4800	76	95	MULTI-MODAL	09/09/2010	One-Off		
NA-02-D-01	INDUSTRIAL ESTATE, BEITH	NORTH AYRSHIRE	Edge of Town		16736		201	VEHICLES	05/10/1983	One-Off		
NB-02-D-01	INDUSTRIAL ESTATE, HEXHAM	NORTHUMBERLAND	Edge of Town	4.9	10525	371	219	MULTI-MODAL	23/05/2005	One-Off		
NF-02-D-01	INDUSTRIAL ESTATE, KINGS LYNN	NORFOLK	Edge of Town	37	109351		1417	VEHICLES	28/11/1990	One-Off		
NF-02-D-02	INDUSTRIAL ESTATE, DEREHAM	NORFOLK	Edge of Town	26.2	51000	1700	990	MULTI-MODAL	22/11/2000	One-Off		
NL-02-D-01	INDUSTRIAL EST., COATBRIDGE	NORTH LANARKSHIRE	Not Known		19040		252	VEHICLES	28/09/1983	One-Off		
NL-02-D-02	INDUSTRIAL EST., MOTHERWELL	NORTH LANARKSHIRE	Edge of Town		3760		139	VEHICLES	04/10/1983	One-Off		
NL-02-D-03	INDUSTRIAL EST, NEAR GLASGOW	NORTH LANARKSHIRE	Free Standing (PPS6 Out of Town)		53551		567	VEHICLES	18/09/1983	One-Off		
NO-02-D-01	INDUSTRIAL EST., SCUNTHORPE	NORTH LINCOLNSHIRE	Edge of Town		2983		161	VEHICLES	29/09/1983	One-Off		
NT-02-D-01	IND. ESTATE, SUTTON-IN-ASHFLD	NOTTINGHAMSHIRE	Edge of Town	15	26400	461	215	MULTI-MODAL	30/06/2006	One-Off		
NW-02-D-01	INDUSTRIAL ESTATES, NEWPORT	NEWPORT	Edge of Town		23483		568	VEHICLES	12/10/1983	One-Off		
NY-02-D-01	INDUSTRIAL ESTATE, SHERBURN	NORTH YORKSHIRE	Free Standing (PPS6 Out of Town)	0.36	1197	38	35	VEHICLES	19/04/2005	One-Off		
PS-02-D-01	INDUSTRIAL ESTATE, DYFREDD	POWYS	Not Known		16932		427	VEHICLES	12/10/1983	One-Off		
PS-02-D-02	INDUSTRIAL ESTATE, VASTRE	POWYS	Edge of Town		19429		405	VEHICLES	13/10/1983	One-Off		
RC-02-D-01	INDUSTRIAL EST., PONTYPRIDD	RHONDDA CYNON TAFF	Not Known		31882		834	VEHICLES	27/10/1983	One-Off		
RE-02-D-01	INDUSTRIAL ESTATE, READING	READING	Edge of Town	51.9	167416		0	VEHICLES	08/06/1986	One-Off		
RE-02-D-02	INDUSTRIAL ESTATE, READING	READING	Edge of Town	13.7	69375		0	VEHICLES	08/06/1986	Initial Survey		
RE-02-D-03	INDUSTRIAL ESTATE, READING	READING	Edge of Town	12.9	79040	1200	1997	VEHICLES	29/11/1995	One-Off		
RE-02-D-04	WINNERSH TRIANGLE, READING	READING	Edge of Town	19	81874	1800	1894	VEHICLES	05/12/1995	Re-Survey		
RI-02-D-01	IND. ESTATE, NEAR BRIDLINGTON	EAST RIDING OF YORKSHIRE	Free Standing (PPS6 Out of Town)	34.3	74583		1600	VEHICLES	20/11/1990	One-Off		
SB-02-D-01	INDUSTRIAL EST., DARNICK	SCOTTISH BORDERS	Neighbourhood Centre (PPS6 Local Centre)		4940		81	VEHICLES	13/09/1983	One-Off		
SF-02-D-01	INDUSTRIAL ESTATE, IPSWICH	SUFFOLK	Suburban Area (PPS6 Out of Centre)	2.6	17500	205	100	VEHICLES	28/07/2003	One-Off		
SF-02-D-02	INDUSTRIAL ESTATE, IPSWICH	SUFFOLK	Suburban Area (PPS6 Out of Centre)	17	102000	547	1175	MULTI-MODAL	22/05/2007	One-Off		
SL-02-D-01	INDUSTRIAL ESTATE, HAMILTON	SOUTH LANARKSHIRE	Suburban Area (PPS6 Out of Centre)		42168		986	VEHICLES	21/09/1983	One-Off		
SL-02-D-02	INDUSTRIAL ESTATE, STRU'HILL	SOUTH LANARKSHIRE	Suburban Area (PPS6 Out of Centre)		16903		223	VEHICLES	29/09/1983	One-Off		
ST-02-D-01	INDUSTRIAL ESTATE, LICHFIELD	STAFFORDSHIRE	Edge of Town	11.8	11780		500	VEHICLES	05/11/1995	One-Off		
ST-02-D-03	INDUSTRIAL EST., WOMBOURNE	STAFFORDSHIRE	Edge of Town	20.9	66600		1516	VEHICLES	23/07/1995	One-Off		
ST-02-D-04	INDUSTRIAL ESTATE, LICHFIELD	STAFFORDSHIRE	Edge of Town	17	40905	992	1124	VEHICLES	08/09/2000	One-Off		
SY-02-D-01	INDUSTRIAL EST., NR ROTHERAM	SOUTH YORKSHIRE	Free Standing (PPS6 Out of Town)		5145		112	VEHICLES	06/10/1983	One-Off		
SY-02-D-02	INDUSTRIAL ESTATE, DONCASTER	SOUTH YORKSHIRE	Edge of Town		36124		738	VEHICLES	05/10/1983	One-Off		
TV-02-D-01	IND.ESTATE, CONSETT-LEADGATE	TEES VALLEY	Not Known		14115		329	VEHICLES	10/10/1983	One-Off		
TV-02-D-02	INDUSTRIAL ESTATES, CONSETT	TEES VALLEY	Not Known		91134		1478	VEHICLES	03/10/1983	One-Off		

TV-02-D-03	INDUSTRIAL EST., MIDDLESBRGH	TEES VALLEY	Edge of Town		9092		404	VEHICLES	01/01/1980 One-Off
TW-02-D-01	INDUSTRIAL EST., CRAMLINGTON	TYNE & WEAR	Not Known		13801		372	VEHICLES	18/10/1983 One-Off
TW-02-D-02	IND.EST, HOUGHTON LE SPRING	TYNE & WEAR	Not Known		39348		1012	VEHICLES	17/10/1983 One-Off
TW-02-D-03	INDUSTRIAL EST., NORTH TYNE	TYNE & WEAR	Not Known		17640		574	VEHICLES	21/10/1983 One-Off
TW-02-D-04	INDUSTRIAL ESTATE, S. SHIELDS	TYNE & WEAR	Suburban Area (PPS6 Out of Centre)		4102		76	VEHICLES	03/10/1983 One-Off
TW-02-D-05	INDUSTRIAL EST., SEDGELETCH	TYNE & WEAR	Not Known		6842		134	VEHICLES	17/10/1983 One-Off
TW-02-D-06	INDUSTRIAL ESTATE, N. SHIELDS	TYNE & WEAR	Suburban Area (PPS6 Out of Centre)	4	23000	330	191	MULTI-MODAL	19/10/2006 One-Off
WD-02-D-01	INDUSTRIAL EST., VALE OF LEVEN	WEST DUNBARTONSHIRE	Not Known		54977		1785	VEHICLES	27/09/1983 One-Off
WH-02-D-01	INDUSTRIAL ESTATE, BALHAM	WANDSWORTH	Suburban Area (PPS6 Out of Centre)	0.65	5125	0	55	MULTI-MODAL	13/05/2005 One-Off
WL-02-D-01	IND. ESTATE, WOOTTON BASSETT	WILTSHIRE	Edge of Town	1.9	7050	224	214	MULTI-MODAL	03/10/2006 One-Off
WM-02-D-01	INDUSTRIAL EST., BIRMINGHAM	WEST MIDLANDS	Edge of Town	0.9	2510	36	32	VEHICLES	24/03/2000 One-Off
WS-02-D-01	INDUSTRIAL EST. ,L'HAMPTON	WEST SUSSEX	Edge of Town	7	19900		0	VEHICLES	16/10/1990 One-Off
WS-02-D-02	INDUSTRIAL EST.,PARTRIDGE GR.	WEST SUSSEX	Neighbourhood Centre (PPS6 Local Centre)	6.7	20484		0	VEHICLES	15/05/1992 One-Off
WS-02-D-03	INDUSTRIAL EST., NR HORSHAM	WEST SUSSEX	Edge of Town	3.1	10538		0	VEHICLES	15/05/1992 One-Off
WS-02-D-04	IND. ESTATE, NEAR PULBOROUGH	WEST SUSSEX	Free Standing (PPS6 Out of Town)	0.47	1216	24	13	VEHICLES	02/10/2002 One-Off
WS-02-D-05	IND. ESTATE, NR BURGESS HILL	WEST SUSSEX	Free Standing (PPS6 Out of Town)	2.6	5858	182	191	VEHICLES	24/09/2003 One-Off
WY-02-D-01	INDUSTRIAL ESTATE, LEEDS	WEST YORKSHIRE	Edge of Town Centre	0.92	4225	91	92	VEHICLES	19/04/2005 One-Off
WY-02-D-02	INDUSTRIAL EST., HUDDERSFIELD	WEST YORKSHIRE	Edge of Town	2.12	20824	193	158	MULTI-MODAL	11/09/2006 One-Off

Vehicle Only Surveys
Prior to 2003
Location
Site Size
Site Content

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : D - INDUSTRIAL ESTATE
MULTI-MODAL VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	ES	EAST SUSSEX	1 days
03	**SOUTH WEST**		
	BR	BRISTOL CITY	1 days
04	**EAST ANGLIA**		
	CA	CAMBRIDGESHIRE	1 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 days
	NT	NOTTINGHAMSHIRE	1 days
07	**YORKSHIRE & NORTH LINCOLNSHIRE**		
	WY	WEST YORKSHIRE	1 days
08	**NORTH WEST**		
	CH	CHESHIRE	1 days
	LC	LANCASHIRE	1 days
	MS	MERSEYSIDE	1 days
09	**NORTH**		
	NB	NORTHUMBERLAND	1 days
	TW	TYNE & WEAR	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Filtering Stage 2 selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
Range: 2430 to 26400 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/03 to 09/09/10

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	3 days
Tuesday	2 days
Thursday	3 days
Friday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaking using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	4
Edge of Town	7

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	5
Residential Zone	2

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

LIST OF SITES relevant to selection parameters

1 **BR-02-D-03** **INDUSTRIAL ESTATE, BRISTOL** **BRISTOL CITY**
CROFTS END ROAD
SPEEDWELL
BRISTOL
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 6000 sqm

2 **CA-02-D-03** **IND. ESTATE, PETERBOROUGH** **CAMBRIDGESHIRE**
SAVILLE ROAD
WESTWOOD
PETERBOROUGH
Suburban Area (PPS6 Out of Centre)
No Sub Category
Total Gross floor area: 4425 sqm

3 **CH-02-D-02** **INDUSTRIAL EST., NORTHWICH** **CHESHIRE**
MANCHESTER ROAD
WINCHAM
NORTHWICH
Edge of Town
Industrial Zone
Total Gross floor area: 22000 sqm

4 **ES-02-D-05** **IND. ESTATE, EASTBOURNE** **EAST SUSSEX**
COURTLANDS ROAD

EASTBOURNE
Edge of Town
Residential Zone
Total Gross floor area: 7525 sqm

5 **LC-02-D-04** **INDUSTRIAL ESTATE, GARSTANG** **LANCASHIRE**
GREEN LANE WEST

GARSTANG
Edge of Town
Industrial Zone
Total Gross floor area: 4555 sqm

6 **LN-02-D-01** **INDUSTRIAL ESTATE, GRANTHAM** **LINCOLNSHIRE**
BELTON LANE

GRANTHAM
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 5347 sqm

7 **MS-02-D-05** **INDUSTRIAL ESTATE, ST HELENS** **MERSEYSIDE**
BROADOAK ROAD

ST HELENS
Edge of Town
No Sub Category
Total Gross floor area: 2430 sqm

8 **NB-02-D-01** **INDUSTRIAL ESTATE, HEXHAM** **NORTHUMBERLAND**
A695

HEXHAM
Edge of Town
Industrial Zone
Total Gross floor area: 10525 sqm

9 **NT-02-D-01** **IND. ESTATE, SUTTON-IN-ASHFLD** **NOTTINGHAMSHIRE**
B6028 STONEYFORD ROAD
STANTON HILL
SUTTON-IN-ASHFIELD
Edge of Town
No Sub Category
Total Gross floor area: 26400 sqm

LIST OF SITES relevant to selection parameters (Cont.)

10 TW-02-D-06 INDUSTRIAL ESTATE, N. SHIELDS TYNE & WEAR
NORHAM ROAD
WEST CHIRTON
NORTH SHIELDS
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 23000 sqm

11 WY-02-D-02 INDUSTRIAL EST., HUDDERSFIELD WEST YORKSHIRE
A629 WAKEFIELD ROAD
TANDEM
HUDDERSFIELD
Edge of Town
No Sub Category
Total Gross floor area: 20824 sqm

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

MULTI-MODAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	0	0	0.000	0	0	0.000	0	0	0.000
00:30 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 01:30	0	0	0.000	0	0	0.000	0	0	0.000
01:30 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 02:30	0	0	0.000	0	0	0.000	0	0	0.000
02:30 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 03:30	0	0	0.000	0	0	0.000	0	0	0.000
03:30 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 04:30	0	0	0.000	0	0	0.000	0	0	0.000
04:30 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 05:30	0	0	0.000	0	0	0.000	0	0	0.000
05:30 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 06:30	0	0	0.000	0	0	0.000	0	0	0.000
06:30 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 07:30	11	12094	0.159	11	12094	0.079	11	12094	0.238
07:30 - 08:00	11	12094	0.224	11	12094	0.090	11	12094	0.314
08:00 - 08:30	11	12094	0.277	11	12094	0.119	11	12094	0.396
08:30 - 09:00	**11**	**12094**	**0.284**	11	12094	0.147	11	12094	0.431
09:00 - 09:30	11	12094	0.206	11	12094	0.138	11	12094	0.344
09:30 - 10:00	11	12094	0.165	11	12094	0.165	11	12094	0.330
10:00 - 10:30	11	12094	0.212	11	12094	0.186	11	12094	0.398
10:30 - 11:00	11	12094	0.178	11	12094	0.199	11	12094	0.377
11:00 - 11:30	11	12094	0.219	11	12094	0.216	**11**	**12094**	**0.435**
11:30 - 12:00	11	12094	0.201	11	12094	0.222	11	12094	0.423
12:00 - 12:30	11	12094	0.180	11	12094	0.253	11	12094	0.433
12:30 - 13:00	11	12094	0.176	11	12094	0.183	11	12094	0.359
13:00 - 13:30	11	12094	0.188	11	12094	0.213	11	12094	0.401
13:30 - 14:00	11	12094	0.203	11	12094	0.181	11	12094	0.384
14:00 - 14:30	11	12094	0.177	11	12094	0.195	11	12094	0.372
14:30 - 15:00	11	12094	0.163	11	12094	0.181	11	12094	0.344
15:00 - 15:30	11	12094	0.159	11	12094	0.179	11	12094	0.338
15:30 - 16:00	11	12094	0.187	11	12094	0.201	11	12094	0.388
16:00 - 16:30	11	12094	0.141	11	12094	0.260	11	12094	0.401
16:30 - 17:00	11	12094	0.141	**11**	**12094**	**0.263**	11	12094	0.404
17:00 - 17:30	11	12094	0.095	11	12094	0.263	11	12094	0.358
17:30 - 18:00	11	12094	0.050	11	12094	0.139	11	12094	0.189
18:00 - 18:30	11	12094	0.038	11	12094	0.095	11	12094	0.133
18:30 - 19:00	11	12094	0.018	11	12094	0.030	11	12094	0.048
19:00 - 19:30	0	0	0.000	0	0	0.000	0	0	0.000
19:30 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 20:30	0	0	0.000	0	0	0.000	0	0	0.000
20:30 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 21:30	0	0	0.000	0	0	0.000	0	0	0.000
21:30 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 22:30	0	0	0.000	0	0	0.000	0	0	0.000
22:30 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 23:30	0	0	0.000	0	0	0.000	0	0	0.000
23:30 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			4.041			4.197			8.238

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

*To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.*

Parameter summary

Trip rate parameter range selected:	2430 - 26400 (units: sqm)
Survey date date range:	01/01/03 - 09/09/10
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE for Land Use 02 - EMPLOYMENT/D - INDUSTRIAL ESTATE

MULTI-MODAL TOTAL PEOPLE

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

	ARRIVALS			DEPARTURES			TOTALS		
Time Range	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 00:30	0	0	0.000	0	0	0.000	0	0	0.000
00:30 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 01:30	0	0	0.000	0	0	0.000	0	0	0.000
01:30 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 02:30	0	0	0.000	0	0	0.000	0	0	0.000
02:30 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 03:30	0	0	0.000	0	0	0.000	0	0	0.000
03:30 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 04:30	0	0	0.000	0	0	0.000	0	0	0.000
04:30 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 05:30	0	0	0.000	0	0	0.000	0	0	0.000
05:30 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 06:30	0	0	0.000	0	0	0.000	0	0	0.000
06:30 - 07:00	0	0	0.000	0	0	0.000	0	0	0.000
07:00 - 07:30	11	12094	0.236	11	12094	0.088	11	12094	0.324
07:30 - 08:00	11	12094	0.288	11	12094	0.111	11	12094	0.399
08:00 - 08:30	**11**	**12094**	**0.357**	11	12094	0.146	11	12094	0.503
08:30 - 09:00	11	12094	0.341	11	12094	0.176	11	12094	0.517
09:00 - 09:30	11	12094	0.253	11	12094	0.175	11	12094	0.428
09:30 - 10:00	11	12094	0.193	11	12094	0.199	11	12094	0.392
10:00 - 10:30	11	12094	0.256	11	12094	0.219	11	12094	0.475
10:30 - 11:00	11	12094	0.228	11	12094	0.245	11	12094	0.473
11:00 - 11:30	11	12094	0.268	11	12094	0.258	11	12094	0.526
11:30 - 12:00	11	12094	0.265	11	12094	0.274	11	12094	0.539
12:00 - 12:30	11	12094	0.223	11	12094	0.332	**11**	**12094**	**0.555**
12:30 - 13:00	11	12094	0.241	11	12094	0.244	11	12094	0.485
13:00 - 13:30	11	12094	0.246	11	12094	0.262	11	12094	0.508
13:30 - 14:00	11	12094	0.269	11	12094	0.225	11	12094	0.494
14:00 - 14:30	11	12094	0.217	11	12094	0.244	11	12094	0.461
14:30 - 15:00	11	12094	0.207	11	12094	0.227	11	12094	0.434
15:00 - 15:30	11	12094	0.207	11	12094	0.219	11	12094	0.426
15:30 - 16:00	11	12094	0.258	11	12094	0.267	11	12094	0.525
16:00 - 16:30	11	12094	0.189	**11**	**12094**	**0.365**	11	12094	0.554
16:30 - 17:00	11	12094	0.177	11	12094	0.348	11	12094	0.525
17:00 - 17:30	11	12094	0.136	11	12094	0.341	11	12094	0.477
17:30 - 18:00	11	12094	0.062	11	12094	0.179	11	12094	0.241
18:00 - 18:30	11	12094	0.049	11	12094	0.135	11	12094	0.184
18:30 - 19:00	11	12094	0.020	11	12094	0.042	11	12094	0.062
19:00 - 19:30	0	0	0.000	0	0	0.000	0	0	0.000
19:30 - 20:00	0	0	0.000	0	0	0.000	0	0	0.000
20:00 - 20:30	0	0	0.000	0	0	0.000	0	0	0.000
20:30 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 21:30	0	0	0.000	0	0	0.000	0	0	0.000
21:30 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 22:30	0	0	0.000	0	0	0.000	0	0	0.000
22:30 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 23:30	0	0	0.000	0	0	0.000	0	0	0.000
23:30 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			5.186			5.321			10.507

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

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Parameter summary

Trip rate parameter range selected:	2430 - 26400 (units: sqm)
Survey date date range:	01/01/03 - 09/09/10
Number of weekdays (Monday-Friday):	11
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	9

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Employment Trip Generation

B8 Warehousing Site Selection

Reference	Description	Area	Location	GFA	SPACES	EMPLOY	Survey Type	Most Recent Survey	Status	Travel Plan	SAM
AN-02-F-01	SUPERSTORE DISTRIB., BELFAST	ANTRIM	Edge of Town	15700	198	280	VEHICLES	06/03/2003	One-Off		
AN-02-F-02	DISTRIBUTION CENTRE, BELFAST	ANTRIM	Suburban Area (PPS6 Out of Centre)	10832	179	242	MULTI-MODAL	29/07/2010	One-Off	Yes	
AR-02-F-01	ELECTRICAL DIST., PORTADOWN	ARMAGH	Edge of Town	1900	25	13	VEHICLES	11/11/2009	One-Off		
BD-02-F-01	WAREHOUSING, DUNSTABLE	BEDFORDSHIRE	Edge of Town	6050	19	11	VEHICLES	07/03/2002	One-Off		
BF-02-F-01	COLD STORAGE, BRACKNELL	BRACKNELL FOREST	Suburban Area (PPS6 Out of Centre)	4590	78	56	VEHICLES	20/11/1991	One-Off		
BU-02-F-01	SUPERSTORE DISTRIB.,M.KEYNES	BUCKINGHAMSHIRE	Edge of Town	52125	638	1329	VEHICLES	07/02/2002	One-Off		
CR-02-F-01	WAREHOUSING ESTATE, CORK	CORK	Suburban Area (PPS6 Out of Centre)	14400	914	47	MULTI-MODAL	07/12/2005	One-Off		
CR-02-F-02	PNEUMATIC CENTRE, CORK	CORK	Edge of Town	4650	25	19	VEHICLES	26/06/2009	One-Off		
CW-02-F-01	WAREHOUSING, TRURO	CORNWALL	Edge of Town	5150	50	55	VEHICLES	18/09/2007	One-Off		
DC-02-F-01	STEEL DISTRIB., STALBRIDGE	DORSET	Neighbourhood Centre (PPS6 Local Centre)	9100	39	50	VEHICLES	05/10/2001	One-Off		
DL-02-F-01	CLARITY, DUBLIN	DUBLIN	Neighbourhood Centre (PPS6 Local Centre)	3760	67	35	MULTI-MODAL	03/12/2009	One-Off		
EG-02-F-01	DEPART.STORE DIST., PK ROYAL	EALING	Suburban Area (PPS6 Out of Centre)	12463	80	650	VEHICLES	18/06/1991	One-Off		
EG-02-F-02	FREIGHT FORWARDING,N. ACTON	EALING	Suburban Area (PPS6 Out of Centre)	6700	26	57	VEHICLES	04/07/1991	One-Off		
EG-02-F-03	BREWERY DISTRIB., HARLESDEN	EALING	Suburban Area (PPS6 Out of Centre)	5000	30	65	VEHICLES	24/10/1991	One-Off		
EG-02-F-04	VIDEO DISTRIBUTION,HARLESDEN	EALING	Suburban Area (PPS6 Out of Centre)	3000	44	98	VEHICLES	06/11/1991	One-Off		
EG-02-F-05	WINE DISTRIBUTION, NTH ACTON	EALING	Suburban Area (PPS6 Out of Centre)	7000	40	60	VEHICLES	30/10/1991	One-Off		
EG-02-F-06	GARDEN FURNIT. DIST., N. ACTON	EALING	Suburban Area (PPS6 Out of Centre)	1000	6	15	VEHICLES	30/10/1991	One-Off		
EG-02-F-07	CABLE DISTRIBUTION, N. ACTON	EALING	Suburban Area (PPS6 Out of Centre)	1393	22	36	VEHICLES	03/10/1991	One-Off		
EG-02-F-08	SEALING MATERIALS DIS., G'FORD	EALING	Suburban Area (PPS6 Out of Centre)	3900	20	34	VEHICLES	05/11/1991	One-Off		
EG-02-F-09	CABLE DISTRIB., GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	1420	20	36	VEHICLES	05/11/1991	One-Off		
EG-02-F-10	VALVES DISTRIB., GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	2787	25	19	VEHICLES	14/11/1991	One-Off		
EG-02-F-11	PHARMACEUT. DIST., GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	7900	41	80	VEHICLES	14/11/1991	One-Off		
EG-02-F-12	ELECTRICAL DIST., GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	7525	200	204	VEHICLES	19/11/1991	One-Off		
EG-02-F-13	THEATRE PROD., GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	5481	35	135	VEHICLES	07/11/1991	One-Off		
EG-02-F-14	WAREHOUSING, GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	950	6	7	VEHICLES	12/11/1991	One-Off		
EG-02-F-15	WAREHOUSING, GREENFORD	EALING	Suburban Area (PPS6 Out of Centre)	1045	10	10	VEHICLES	12/11/1991	One-Off		
EG-02-F-16	SANITARY WARE DIST., E. ACTON	EALING	Suburban Area (PPS6 Out of Centre)	3248	40	48	VEHICLES	20/11/1991	One-Off		
EG-02-F-17	CLOTHING DISTRIB., HANGER LN	EALING	Suburban Area (PPS6 Out of Centre)	11495	200	350	VEHICLES	21/11/1991	One-Off		
EN-02-F-01	WAREHOUSING, ENFIELD	ENFIELD	Suburban Area (PPS6 Out of Centre)	13251	164	550	VEHICLES	19/11/2008	One-Off		
ES-02-F-01	BREWERY DISTRIB., LEWES	EAST SUSSEX	Edge of Town Centre	3400	69	63	VEHICLES	04/06/1991	One-Off		
GC-02-F-01	DISTRIBUTION CEN., GLASGOW	GLASGOW CITY	Suburban Area (PPS6 Out of Centre)	11504	166	223	MULTI-MODAL	10/09/2001	One-Off		
GM-02-F-01	SUPERSTORE DISTRIB., WIGAN	GREATER MANCHESTER	Edge of Town	8848	120		VEHICLES	10/04/1995	One-Off		
HC-02-F-01	WAREHOUSING, SOUTHAMPTON	HAMPSHIRE	Edge of Town	4000	105	60	VEHICLES	21/11/2007	One-Off		
HF-02-F-01	SUPERSTORE DISTRIB., BUNT'FRD	HERTFORDSHIRE	Edge of Town	47584	470	717	VEHICLES	06/12/2000	One-Off		
HF-02-F-02	SUPERSTORE DIST., WELWYN GC	HERTFORDSHIRE	Suburban Area (PPS6 Out of Centre)	18600	162	337	MULTI-MODAL	06/09/2002	One-Off		
HF-02-F-03	DISTRIBUTION CEN., HATFIELD	HERTFORDSHIRE	Edge of Town	80000	592	1200	VEHICLES	10/07/2008	One-Off		
HI-02-F-01	WAREHOUSING,NEAR INVERNESS	HIGHLAND	Free Standing (PPS6 Out of Town)	890	16	17	VEHICLES	24/05/2006	One-Off		
KC-02-F-01	FOOD DISTRIB., SNODLAND	KENT	Edge of Town	7500	106	77	VEHICLES	20/06/2002	One-Off		
KI-02-F-01	STATIONERY, CHESSINGTON	KINGSTON	Town Centre	4661	89	130	VEHICLES	08/09/2009	One-Off		
LC-02-F-01	HAULIERS, CARNFORTH	LANCASHIRE	Edge of Town Centre	22296	70	60	VEHICLES	16/03/1992	One-Off		
LC-02-F-02	WAREHOUSING, PRESTON	LANCASHIRE	Suburban Area (PPS6 Out of Centre)	1200	40	22	VEHICLES	22/06/2007	One-Off		
LN-02-F-01	BOOK SERVICE, GRANTHAM	LINCOLNSHIRE	Edge of Town	32300	83	131	MULTI-MODAL	29/11/2010	One-Off		
NW-02-F-01	LOGISTICS CENTRE, NEWPORT	NEWPORT	Edge of Town	16275	105	32	VEHICLES	12/10/2007	One-Off		
RE-02-F-01	DEPART. STORE DIS.,NR READING	READING	Edge of Town	7750	92	104	VEHICLES	28/11/1990	One-Off		
RE-02-F-02	BISCUIT DISTRIBUTION, READING	READING	Edge of Town	6533	31	45	VEHICLES	27/11/1991	One-Off		
RE-02-F-03	CATERING EQUIP., NEAR READING	READING	Suburban Area (PPS6 Out of Centre)	7872	63	82	VEHICLES	20/11/1991	One-Off		
SC-02-F-01	BREWERY DISTRIB., WEYBRIDGE	SURREY	Not Known	7085	141	160	VEHICLES	09/10/1997	One-Off		
SC-02-F-02	DRINKS DISTRIBUTION, BYFLEET	SURREY	Not Known	3065	65	58	VEHICLES	05/07/1990	One-Off		
SC-02-F-03	BREWERY DISTRIB., BYFLEET	SURREY	Not Known	55740	50	94	VEHICLES	05/07/1990	One-Off		
SC-02-F-04	WAREHOUSING, CHERTSEY	SURREY	Edge of Town	4460	40	26	VEHICLES	27/11/2007	One-Off		
SF-02-F-01	PHARMACY DISTRIB., THETFORD	SUFFOLK	Edge of Town	4550	58	80	VEHICLES	27/09/2002	One-Off		
SL-02-F-01	SUPERSTORE DIST., E. KILBRIDE	SOUTH LANARKSHIRE	Edge of Town	24500	145	370	VEHICLES	13/12/1997	One-Off		
TV-02-F-01	SUPERSTORE DIST., STOCKTON	TEES VALLEY	Suburban Area (PPS6 Out of Centre)	30187	348	758	VEHICLES	04/10/2001	One-Off		
TV-02-F-02	ARGOS WAREHOUSE, DARL'TON	TEES VALLEY	Edge of Town	80066	832	510	MULTI-MODAL	07/10/2008	One-Off	Yes	
WB-02-F-01	FOOD DISTRIBUTION, THATCHAM	WEST BERKSHIRE	Edge of Town	15881			VEHICLES	28/11/1990	One-Off		
WM-02-F-01	LEGETT LOGIS., BIRMINGHAM	WEST MIDLANDS	Edge of Town Centre	4000	99	57	VEHICLES	17/06/2009	One-Off		
WO-02-F-01	SUPERSTORE DIST., WORCESTER	WORCESTERSHIRE	Edge of Town	31416	318	836	VEHICLES	14/03/2002	One-Off		
WO-02-F-02	DISTRIB. CENTRE, WORCESTER	WORCESTERSHIRE	Edge of Town	3824	100	120	MULTI-MODAL	10/09/2002	One-Off		

Prior to 2001
Location
Site Size
PT > 80 services per day
Site removed due to extreme results

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
Category : F - WAREHOUSING (COMMERCIAL)

VEHICLES

Selected regions and areas:

02	**SOUTH EAST**		
	BD	BEDFORDSHIRE	1 days
	HC	HAMPSHIRE	1 days
03	**SOUTH WEST**		
	DC	DORSET	1 days
04	**EAST ANGLIA**		
	SF	SUFFOLK	1 days
05	**EAST MIDLANDS**		
	LN	LINCOLNSHIRE	1 days
09	**NORTH**		
	TV	TEES VALLEY	1 days

Filtering Stage 2 selection:

Parameter: Gross floor area
Range: 4000 to 32300 (units: sqm)

Public Transport Provision:
Selection by: Include all surveys

Date Range: 01/01/01 to 29/11/10

Selected survey days:

Monday	1 days
Wednesday	1 days
Thursday	2 days
Friday	2 days

Selected survey types:

Manual count	6 days
Directional ATC Count	0 days

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	4
Neighbourhood Centre (PPS6 Local Centre)	1

Selected Location Sub Categories:

Industrial Zone	4
Village	1
No Sub Category	1

LIST OF SITES relevant to selection parameters

1 **BD-02-F-01** **WAREHOUSING, DUNSTABLE** **BEDFORDSHIRE**
FRENCH'S AVENUE

DUNSTABLE
Edge of Town
Industrial Zone
Total Gross floor area: 6050 sqm

2 **DC-02-F-01** **STEEL DISTRIB., STALBRIDGE** **DORSET**
STATION ROAD

STALBRIDGE
Neighbourhood Centre (PPS6 Local Centre)
Village
Total Gross floor area: 9100 sqm

3 **HC-02-F-01** **WAREHOUSING, SOUTHAMPTON** **HAMPSHIRE**
MAURETANIA ROAD
NURSLING INDUSTRIAL ESTATE
SOUTHAMPTON
Edge of Town
Industrial Zone
Total Gross floor area: 4000 sqm

4 **LN-02-F-01** **BOOK SERVICE, GRANTHAM** **LINCOLNSHIRE**
TRENT ROAD

GRANTHAM
Edge of Town
No Sub Category
Total Gross floor area: 32300 sqm

5 **SF-02-F-01** **PHARMACY DISTRIB., THETFORD** **SUFFOLK**
BURRELL WAY
BARROW HILL
THETFORD
Edge of Town
Industrial Zone
Total Gross floor area: 4550 sqm

6 **TV-02-F-01** **SUPERSTORE DIST., STOCKTON** **TEES VALLEY**
MALLEABLE WAY

STOCKTON-ON-TEES
Suburban Area (PPS6 Out of Centre)
Industrial Zone
Total Gross floor area: 30187 sqm

TRIP RATE for Land Use 02 - EMPLOYMENT/F - WAREHOUSING (COMMERCIAL)

VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00	0	0	0.000	0	0	0.000	0	0	0.000
01:00 - 02:00	0	0	0.000	0	0	0.000	0	0	0.000
02:00 - 03:00	0	0	0.000	0	0	0.000	0	0	0.000
03:00 - 04:00	0	0	0.000	0	0	0.000	0	0	0.000
04:00 - 05:00	0	0	0.000	0	0	0.000	0	0	0.000
05:00 - 06:00	0	0	0.000	0	0	0.000	0	0	0.000
06:00 - 07:00	1	30187	0.093	**1**	**30187**	**0.149**	1	30187	0.242
07:00 - 08:00	6	14365	0.091	6	14365	0.061	6	14365	0.152
08:00 - 09:00	6	14365	0.128	6	14365	0.059	6	14365	0.187
09:00 - 10:00	6	14365	0.135	6	14365	0.087	6	14365	0.222
10:00 - 11:00	6	14365	0.092	6	14365	0.080	6	14365	0.172
11:00 - 12:00	6	14365	0.096	6	14365	0.089	6	14365	0.185
12:00 - 13:00	6	14365	0.078	6	14365	0.075	6	14365	0.153
13:00 - 14:00	**6**	**14365**	**0.161**	6	14365	0.116	**6**	**14365**	**0.277**
14:00 - 15:00	6	14365	0.100	6	14365	0.147	6	14365	0.247
15:00 - 16:00	6	14365	0.084	6	14365	0.121	6	14365	0.205
16:00 - 17:00	6	14365	0.079	6	14365	0.125	6	14365	0.204
17:00 - 18:00	6	14365	0.094	6	14365	0.130	6	14365	0.224
18:00 - 19:00	5	11200	0.018	5	11200	0.052	5	11200	0.070
19:00 - 20:00	1	6050	0.000	1	6050	0.033	1	6050	0.033
20:00 - 21:00	0	0	0.000	0	0	0.000	0	0	0.000
21:00 - 22:00	0	0	0.000	0	0	0.000	0	0	0.000
22:00 - 23:00	0	0	0.000	0	0	0.000	0	0	0.000
23:00 - 24:00	0	0	0.000	0	0	0.000	0	0	0.000
Total Rates:			1.249			1.324			2.573

Parameter summary

Trip rate parameter range selected:	4000 - 32300 (units: sqm)
Survey date date range:	01/01/01 - 29/11/10
Number of weekdays (Monday-Friday):	8
Number of Saturdays:	0
Number of Sundays:	0
Surveys manually removed from selection:	11

Appendix D – Trip Generation Analysis – Sensitivity Testing

Project:	**Sudbury Transport Study**	Job No:	**60216795**
Subject:		**Appendix D – Trip Generation Analysis – Sensitivity Tests**	

D1 Introduction

D1.1 Overview

Prior to the identification of the locations and quantum to be assessed for the Main Test as set out in the main report and Appendix C, AECOM in discussions with the client team had identified a range of alternative residential and employment growth scenarios for initial analysis, reflecting the information held at that time. These scenarios have been retained and are referenced as sensitivity testing against the main test scenario.

These sensitivity tests have been based upon alternative scales of development and this appendix sets out the assumptions behind the alternative sizes and land uses that were identified. The locations and access arrangements of the growth areas as well as the trip rates, distribution and assignment of vehicular trips associated reflect those that have been used for the Main Test, based on the approach set out in Appendix C.

It should be reiterated that, although providing an emerging picture of the developer's proposals, the Chilton Woods masterplan and associated access strategy have yet to be agreed with the local planning or highway authorities. Whilst we have adopted aspects of the development quantum and access strategy for the purposes of the analysis in this study, this has been done on a 'without prejudice' basis and should not be assumed to reflect BDC or SCC approval of the current proposals. In particular the access arrangements assumed for the Chilton mixed-use development would need to be agreed with the relevant authorities through the planning process. A single point of vehicular access for the residential development as identified in the emerging Chilton Woods masterplan is not consistent with the relevant Local Plan Policies but does provide a more onerous scenario in traffic concentration terms for consideration in this study. The need for further access points would be subject to transport analysis as part of the planning process.

D2 Development Scenarios and Assumptions

D2.1 Overview

AECOM were asked to consider the trip generation associated with alternative levels of residential and employment development in order to identify the possible impacts on highway flows associated with different types and levels of growth.

D2.2 Residential

As noted previously, residential growth is likely to be focussed on two sites at Chilton and East of Sudbury. In the Local Plan, the Chilton mixed-use development is identified as providing up to 700 dwellings, while it was then anticipated (and subsequently confirmed in the draft core strategy) that the Babergh LDF will identify a growth target of a further 850 homes within Sudbury.

Following discussions with Babergh DC, it was anticipated that the LDF growth may be delivered in one of two ways; either with the full allocation at Sudbury East or with only 500 East of Sudbury and a further 350 forming part of an extended Chilton growth area.

For the purposes of the sensitivity testing, both potential options have been considered and are set out below.

1. Residential Sensitivity Test 1
   - Chilton Mixed-Use Development: 1050 units, accessed from Aubrey Drive
   - East of Sudbury: 500 units accessed from A134 Newton Road

2. Residential Sensitivity Test 2
   - Chilton Mixed-Use Development: 700 units, accessed from Aubrey Drive
   - East of Sudbury: 850 units, accessed from A134 Newton Road

Direct Tel: +44 (0)1727 53 5433
T +44 (0)1727 535000
F +44 (0)1727 535099
E alex.keene@aecom.com
www.aecom.com

AECOM House
63-77 Victoria Street
St Albans
AL1 3ER
United Kingdom

D2.2 Employment

Future employment growth in Sudbury is likely to be focussed on the Chilton growth area and the land at County Farm (East). A planning application for the latter of these was submitted in August 2009, but has yet to be decided. Information contained within the Transport Assessment produced in support of this application indicates that there will be approximately 26,000sqm of employment floor space, with some 23,200sqm of B8 warehousing, 1,600sqm of B1 office space and a call centre of some 1,100sqm. The site would be accessed from a junction on Church Field Road.

Prior to the development of the emerging masterplan for the site, there was less information available relating to the proposed employment development at the Chilton growth area. The Local Plan notes two principal employment zones covered within its policy on the development:

- CP01b) - Approximately 15ha of land to the north of Woodhall Business Park which would be accessed via a new distributor road through the site between a new junction of the A134 Springlands Way and Aubrey Drive but with access confined to being from the A134 only to minimise conflict with residential movements
- CP01c) – 5.3ha of land to the north of, and to be accessed from, Waldingfield Road. This employment use is noted to have only a low impact in terms of traffic generation and on residential amenity.

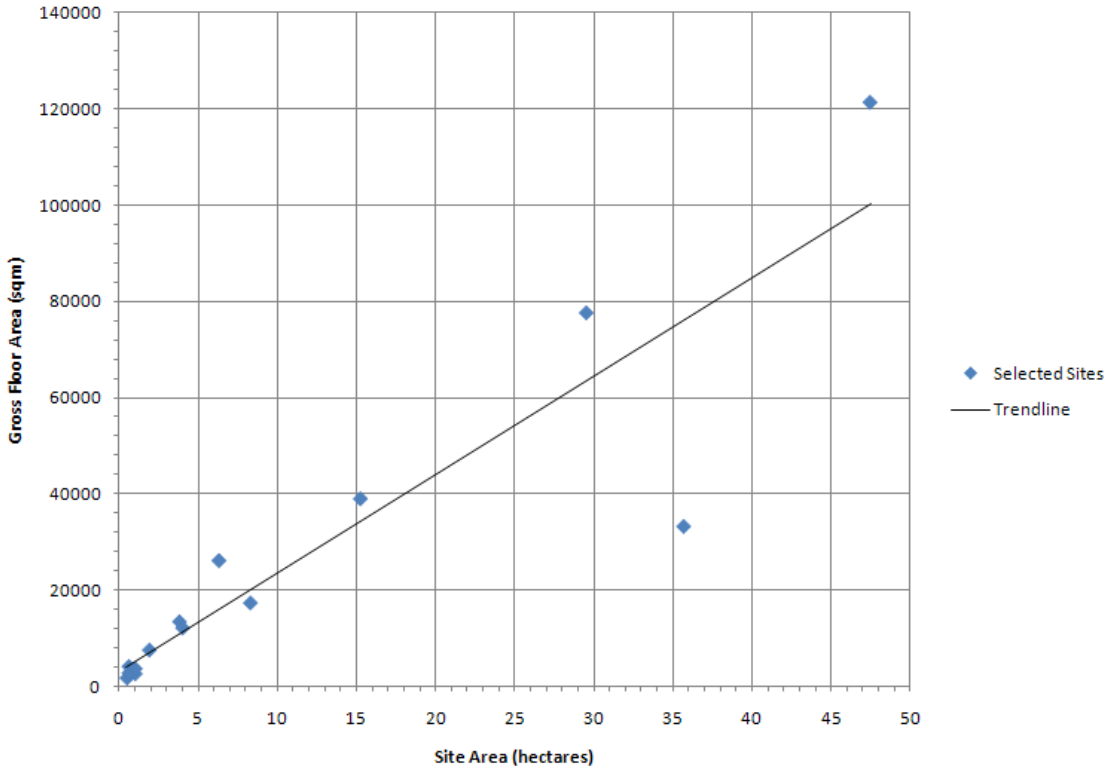
At the time of the initial analysis, no further detail was available relating to the potential mix of the employment on these zones, nor the potential floor areas that may be provided.

In lieu of this information, work was undertaken to underpin the assumptions to be made regarding the potential growth associated with these zones.

At an initial stage it was important to consider the potential floor areas associated with the proposed zones, with two possible approaches identified:

I. Interrogation of the TRICS database to identify the relationship between site area (in hectares) and gross floor area (sqm). This was been done with reference to Business Park sites and following the plotting of the relationship of these two variables a trend line was identified against which the potential gross floor area could be identified for a particular site area (as shown on Graph D1 below).

Graph D1 – Relationship between Site Area and Gross Floor Area – Business Park sites within TRICS



II. Application of the relationship between site area and gross floor area as proposed at the County Farm (East) Development:

26,371sqm / 6.7ha = 3,936sqm/ha

In addition to this, the mix of land uses also needed to be considered. Given the relative natures of the activity and density of employees associated with B1 and B8, the trip rates per 100sqm would be anticipated to be significantly higher for the former compared to the latter. For the purposes of this assessment and in lieu of any further details at that time, it has been agreed with the client team that the County Farm (East) development should be used as the basis for identifying a mix between B1 and B8 land uses.

Taken from the County Farm (East) Transport Assessment:

B8 Floor Area / Total Floor Area = 23,164sqm / 26,371sqm = 0.88.

Based on this information, three alternative employment growth scenarios were identified. These reflect alternative assumptions relating to potential development on the CP1b) plot at Chilton.

The three approaches to the CP1b) land are as follows:

- Low - Development density in line with Approach I (TRICS trendline) above with a similar B8:B1 ratio to County Farm East
- Medium – Development density (Approach II) and B8:B1 ratio in line with County Farm East
- High – Development density based on Approach I (TRICS trendline) above for B1 use only.

It had been agreed that for each scenario, the level of development provided at the County Farm (East) would reflect that set out in the supporting Transport Assessment, while a consistent approach to the CP1c) plot would also be taken. This involves a B8 development with a similar density as proposed at County Farm East, which, based on a plot size of 5.3ha, provides some 21,150sqm of floor space. This would be anticipated to provide a low impact development, in line with the policy identified in the Local Plan.

Given these assumptions, the following employment scenarios were identified:

A. Low Growth Employment Sensitivity Test

- 34,000sqm with 88% B8 and 12% B1, accessed from the A134 Springfield Way [CP01(b)]
- 21,150sqm B8, accessed from Waldingfield Road [CP02(c)]
- 26,371sqm with 88% B8 and 12% B1, accessed from Church Field Road

B. Medium Growth Employment Sensitivity Test

- 59,000sqm with 88% B8 and 12% B1, accessed from the A134 Springfield Way [CP01(b)]
- 21,150sqm B8, accessed from Waldingfield Road [CP02(c)]
- 26,371sqm with 88% B8 and 12% B1, accessed from Church Field Road

C. High Growth Employment Sensitivity Test

- 34,000sqm with B1 only, accessed from the A134 Springfield Way [CP01(b)]
- 21,150sqm B8, accessed from Waldingfield Road [CP02(c)]
- 26,371sqm with 88% B8 and 12% B1, accessed from Church Field Road

D3 Development Scenarios and Assumptions

D3.1 Overview

While the trip generation for these sensitivity tests has been based upon the first principles approach identified for the main test, the land uses have been considered in isolation and as such, no allowance has been made for the containment of trips as a result of a complimentary mixed use development. This is an important difference when considered against the trip generation associated with the likely scenario, and gives an indication as to the extent that mixed use development and integrated land use planning play an important role in minimising the impact of development.

Subsequent analysis of the County Farm (East) Transport Assessment identified some inconsistencies in the quantum of development identified in the report. While the report text noted a total development of 23,164sqm, a comparison of the trip generation and trip rates identified for the individual land uses suggested the development in fact comprised in the order of:

- 23,000sqm B8 Warehousing
- 1,650sqm B1 Office
- 1,080sqm B1 Call Centre
- 25,730sqm Total

For the purposes of this sensitivity testing, the assumptions set out above have been retained based upon the initial calculations, while the trip generation for the County Farm (East) development has been taken directly from the Transport Assessment.

D3.1 Residential Trip Generation

Table D1 identifies the trip generation associated with the two residential sensitivity tests against that identified in the likely growth scenario. Test 1 has the same levels of residential development at each of the growth areas as the main test and provides the best comparison of the impact of containment on trip generation. The associated flow figures for the two sensitivity tests are Figures D1 – D4.

A comparison of the sensitivity tests indicates that there would be only a minimal difference in the overall trip generation based on alternative locations of growth, however the containment of trips associated with mixed use and the provision of complimentary services and facilities would be anticipated to reduce the residential vehicular trip generation by some 210 – 212 trips in the AM peak and 106 – 108 in the PM peak. In Sensitivity Test 1 this would put additional strain on the B1115 Waldingfield Road between the two roundabouts, almost doubling the flow southbound on approach to the A134 junction in the AM peak. In Test 2 there would be increased pressure on the A134 Newton Road / Northern Road roundabout, while flows on the A131 Newton Road on the approach to Belle Vue would increase by approximately a third.

Table D1 – Residential Trip Generation – Sensitivity Testing

Growth Scenario	Development	Units	AM Peak			PM Peak		
			In	Out	Total	In	Out	Total
Main Test	Chilton Mixed-Use Site	1050	107	347	454	316	217	533
	East of Sudbury (LDF)	500	72	234	306	167	115	282
	Total	***1550***	***179***	***581***	***760***	***483***	***332***	***815***
Sensitivity Test 1	Chilton Mixed-Use Site	1050	155	501	655	369	253	622
	East of Sudbury (LDF)	500	74	240	315	177	122	299
	Total	***1550***	***229***	***741***	***970***	***546***	***375***	***921***
Sensitivity Test 2	Chilton Mixed-Use Site	700	103	334	437	246	169	415
	East of Sudbury (LDF)	850	126	409	535	301	207	508
	Total	***1550***	***230***	***743***	***972***	***547***	***376***	***923***

D3.1 Employment Trip Generation

Unlike the residential scenarios, the three employment growth options identified reflect alternative scales and types of development and as such, potentially significantly different trip generations between each of the test. The trip generations of the three sensitivity tests, in comparison to the likely scenario, are provided in Table D2. The relevant traffic flow and impact figures are Figures D5 – D10.

This indicates that the likely growth scenario will in fact result in significantly greater levels of trip generation than had previously been considered. This is a result of a combination of a much greater density of development being identified within the Chilton Woods emerging masterplan than had initially been assumed, and the land use mix assumed, with the emerging masterplan considering a much more even mix of employment types compared to the warehouse led development which had previously been considered.

Table D2 – Employment Trip Generation – Sensitivity Testing

Scenario	Development	Land Use	Size	AM Peak			PM Peak		
				In	Out	Total	In	Out	Total
Main Test	Chilton Mixed-Use Site [CP01(b)]	B1(a) Office	19,717	310	23	333	16	252	268
		B1(c) / B2 Industry	26,289	127	50	177	29	93	122
		B8 Warehousing	19,717	25	10	35	15	25	40
	Chilton Mixed-Use Site [CP01(c)]	B1(a) Office	7,013	110	8	118	6	90	96
		B1(c) / B2 Industry	9,351	45	17	62	10	33	43
		B8 Warehousing	7,013	9	3	12	5	9	14
	County Farm (East)	B1(a) Office	1,610	27	4	31	4	25	29
		B1(a) Call Centre	1,080	32	4	36	9	18	27
		B8 Warehousing	23,000	41	24	65	39	42	81
	Total	***-***	***114,790***	***726***	***144***	***869***	***133***	***587***	***720***
Sensitivity Test A	Chilton Mixed-Use Site [CP01(b)]	B1(a) Office	4,080	65	6	70	4	54	58
		B8 Warehousing	29,920	38	18	56	28	39	67
	Chilton Mixed-Use Site [CP01(c)]	B8 Warehousing	21,150	27	12	40	20	27	47
	County Farm (East)	B1(a) Office	1,610	27	4	31	4	25	29
		B1(a) Call Centre	1,080	32	4	36	9	18	27
		B8 Warehousing	23,000	41	24	65	39	42	81
	Total	***-***	***80,840***	***230***	***68***	***298***	***104***	***205***	***309***
Sensitivity Test B	Chilton Mixed-Use Site [CP01(b)]	B1(a) Office	7,080	112	10	122	7	93	101
		B8 Warehousing	51,920	66	31	97	49	67	116
	Chilton Mixed-Use Site [CP01(c)]	B8 Warehousing	21,150	27	12	40	20	27	47
	County Farm (East)	B1(a) Office	1,610	27	4	31	4	25	29
		B1(a) Call Centre	1,080	32	4	36	9	18	27
		B8 Warehousing	23,000	41	24	65	39	42	81
	Total	***-***	***105,840***	***306***	***85***	***391***	***128***	***273***	***401***
Sensitivity Test C	Chilton Mixed-Use Site [CP01(b)]	B1(a) Office	34,000	540	46	586	36	447	483
		B8 Warehousing	-	-	-	-	-	-	-
	Chilton Mixed-Use Site [CP01(c)]	B8 Warehousing	21,150	27	12	40	20	27	47
	County Farm (East)	B1(a) Office	1,610	27	4	31	4	25	29
		B1(a) Call Centre	1,080	32	4	36	9	18	27
		B8 Warehousing	23,000	41	24	65	39	42	81
	Total	***-***	***80,840***	***667***	***91***	***757***	***107***	***560***	***667***

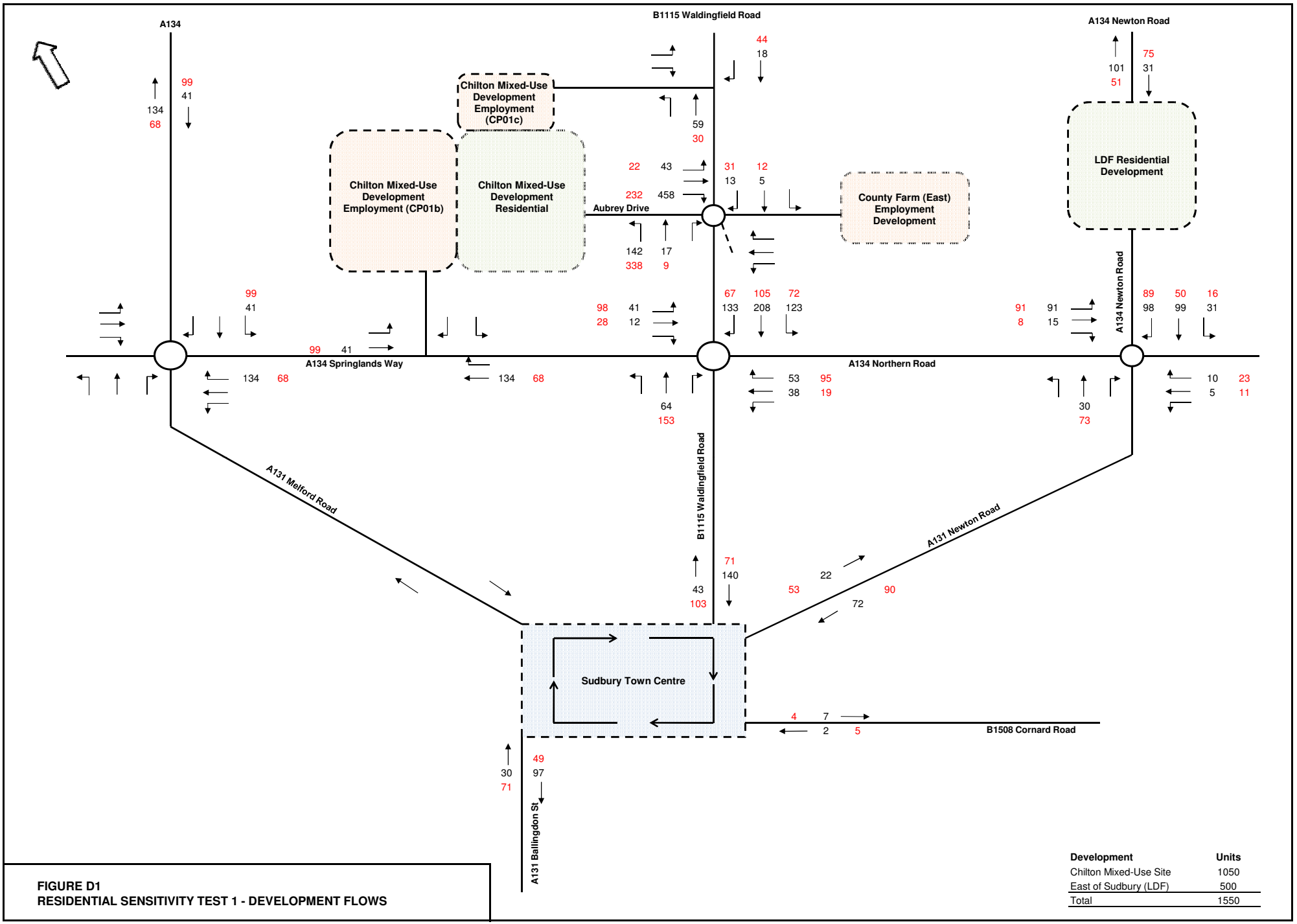


FIGURE D1
RESIDENTIAL SENSITIVITY TEST 1 - DEVELOPMENT FLOWS

Development	Units
Chilton Mixed-Use Site	1050
East of Sudbury (LDF)	500
Total	1550

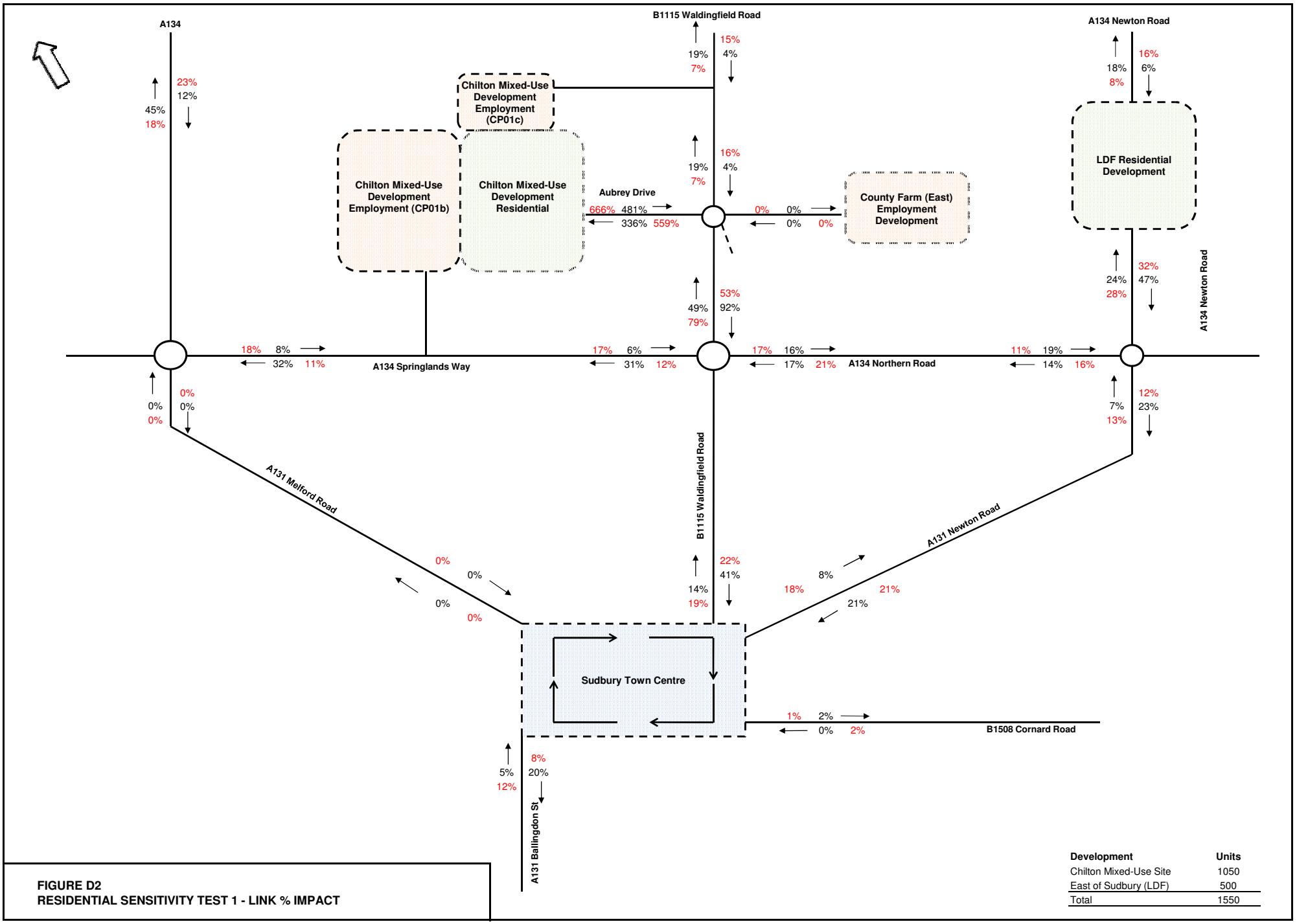


FIGURE D2
RESIDENTIAL SENSITIVITY TEST 1 - LINK % IMPACT

Development	Units
Chilton Mixed-Use Site	1050
East of Sudbury (LDF)	500
Total	1550

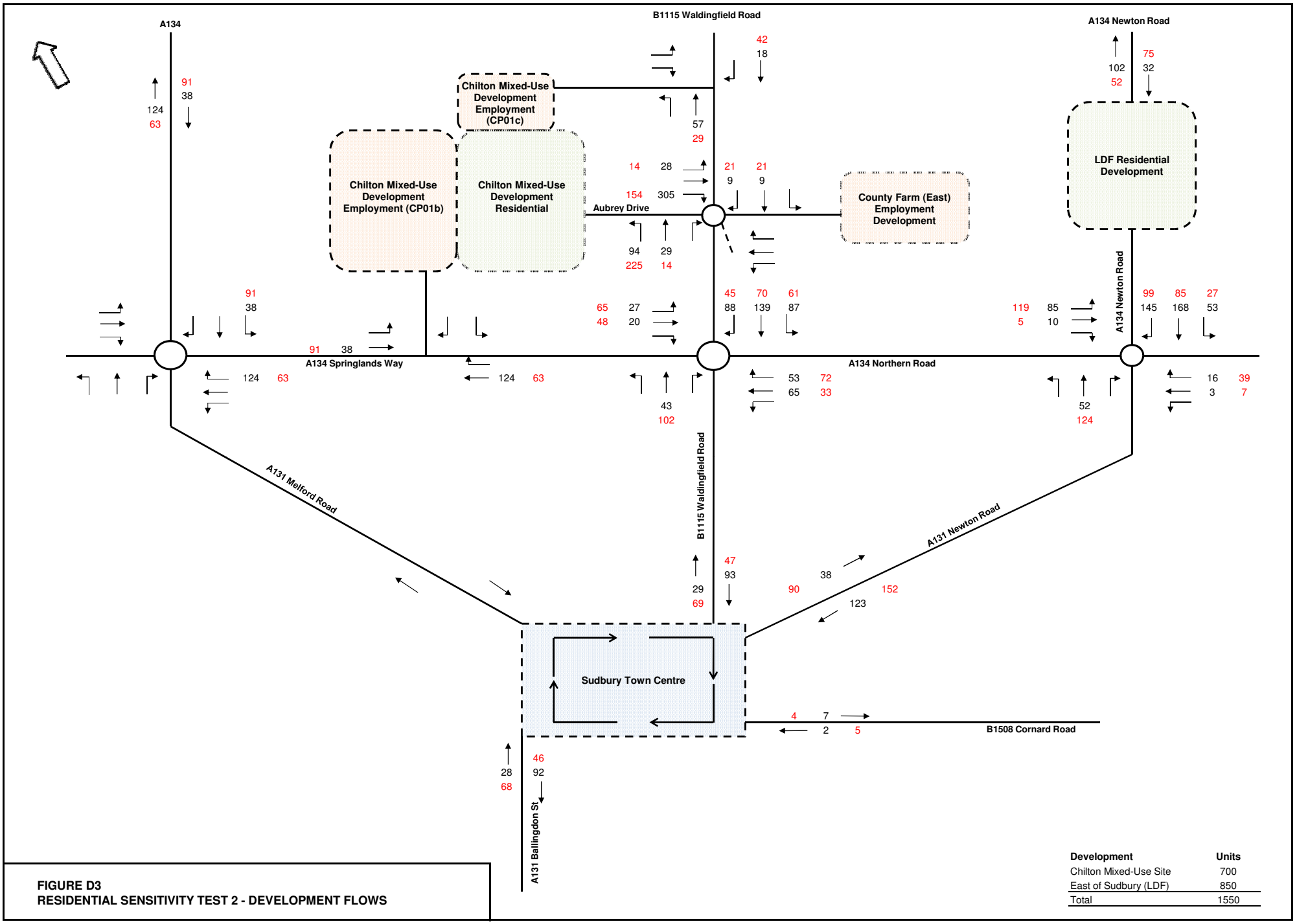


FIGURE D3
RESIDENTIAL SENSITIVITY TEST 2 - DEVELOPMENT FLOWS

Development	Units
Chilton Mixed-Use Site	700
East of Sudbury (LDF)	850
Total	1550

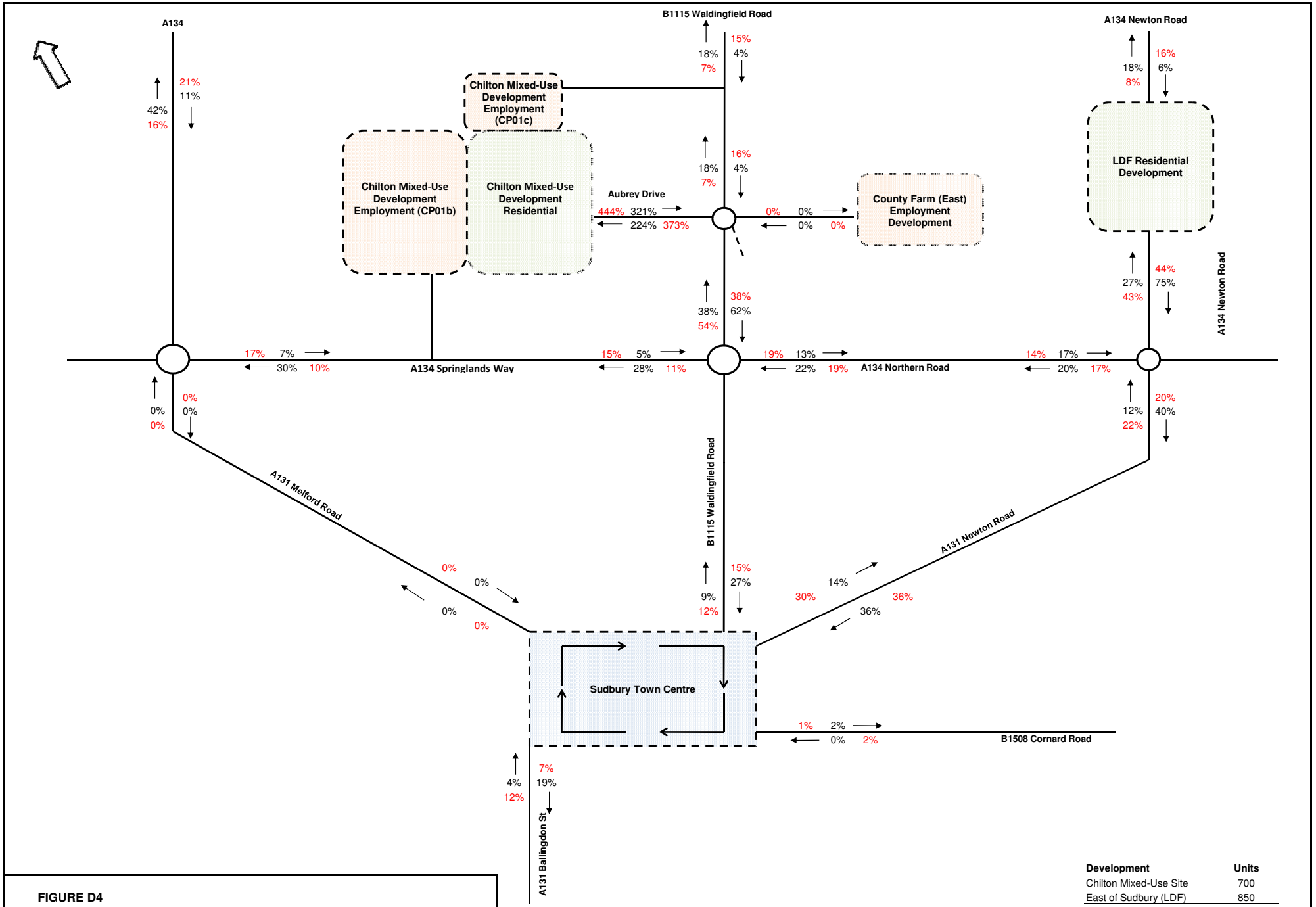


FIGURE D4
RESIDENTIAL SENSITIVITY TEST 2 - LINK % IMPACT

Development	Units
Chilton Mixed-Use Site	700
East of Sudbury (LDF)	850
Total	1550

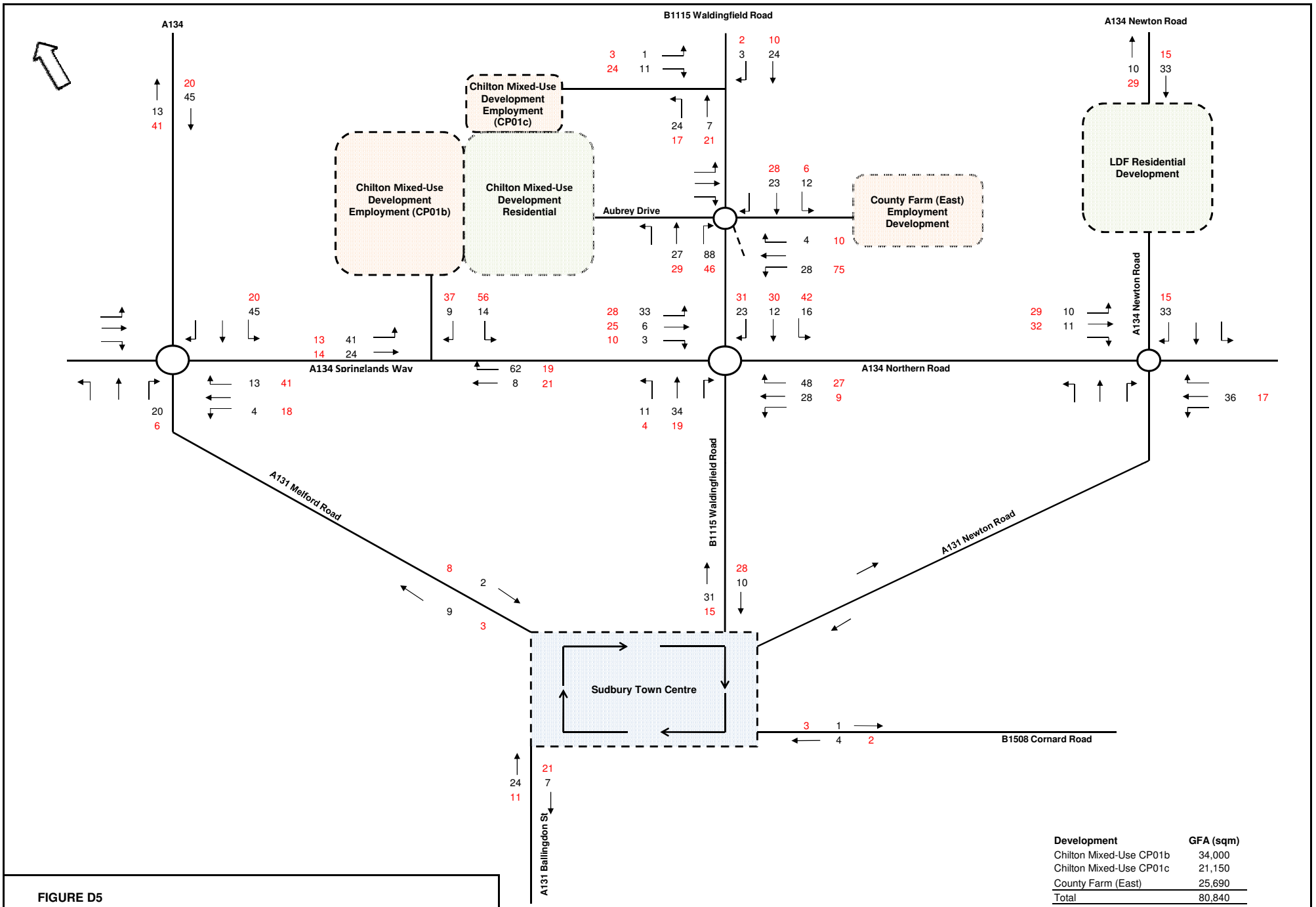


FIGURE D5
EMPLOYMENT SENSITIVITY TEST A (LOW) - DEVELOPMENT FLOWS

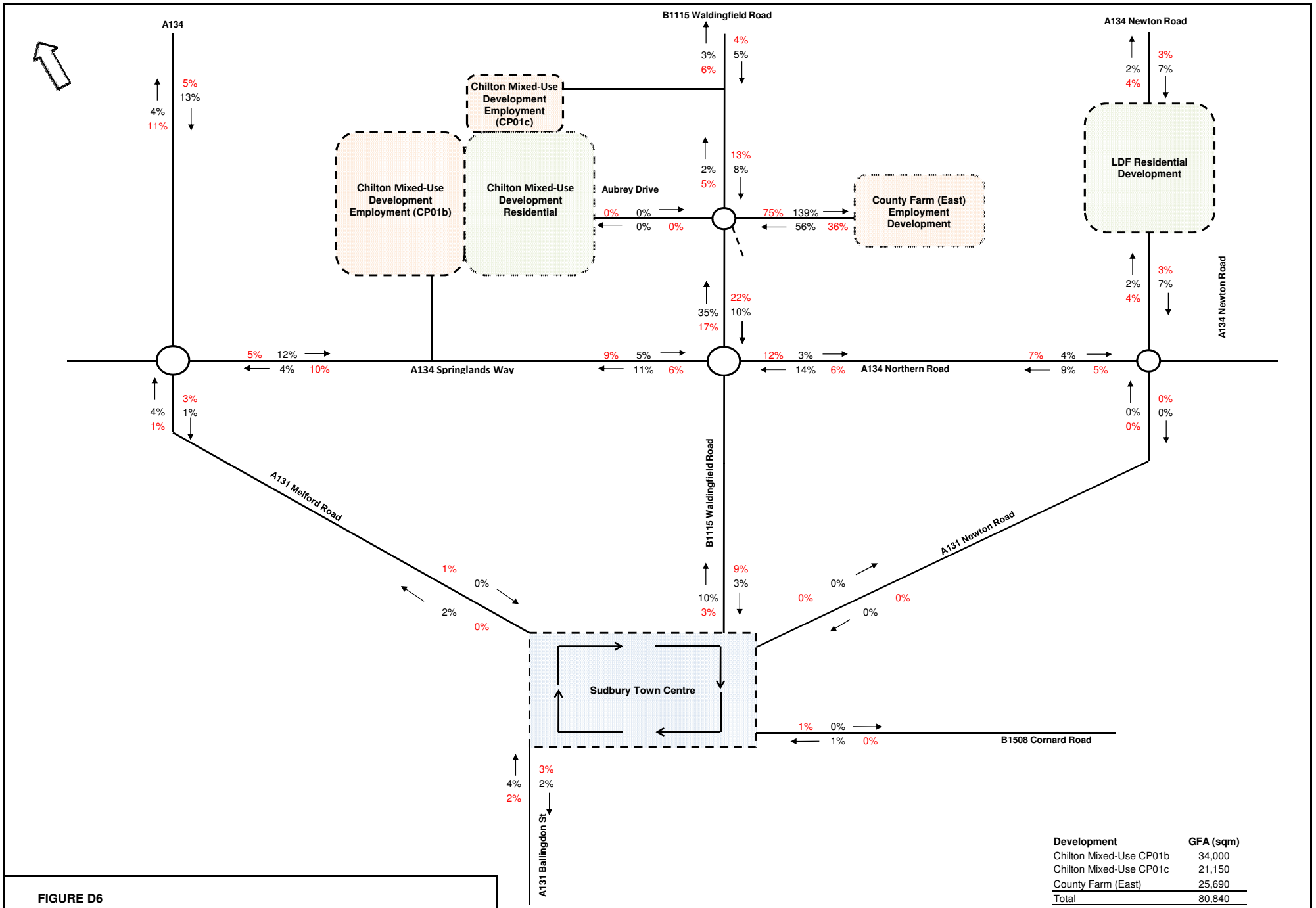


FIGURE D6
EMPLOYMENT SENSITIVITY TEST A (LOW) - LINK % IMPACT

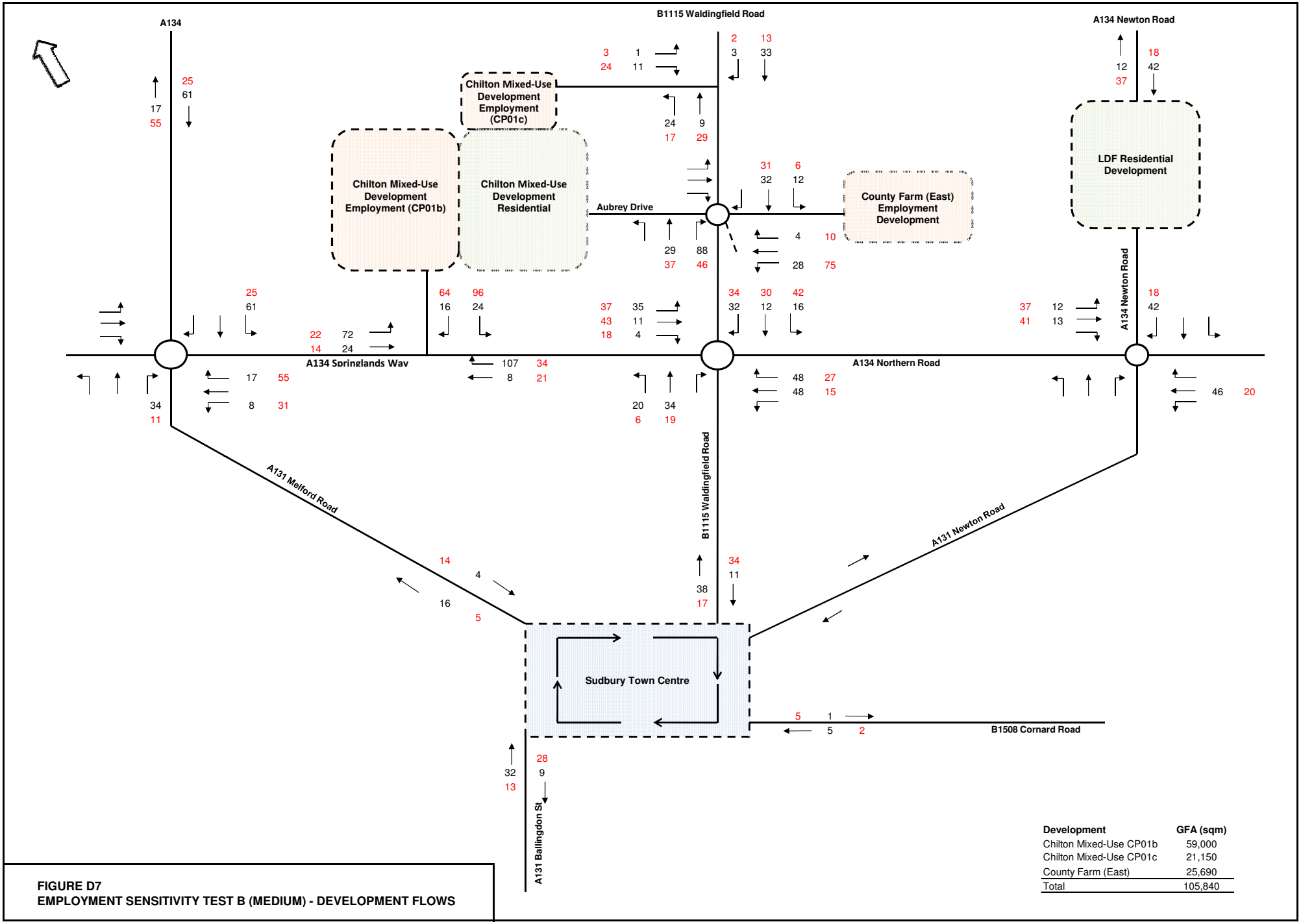
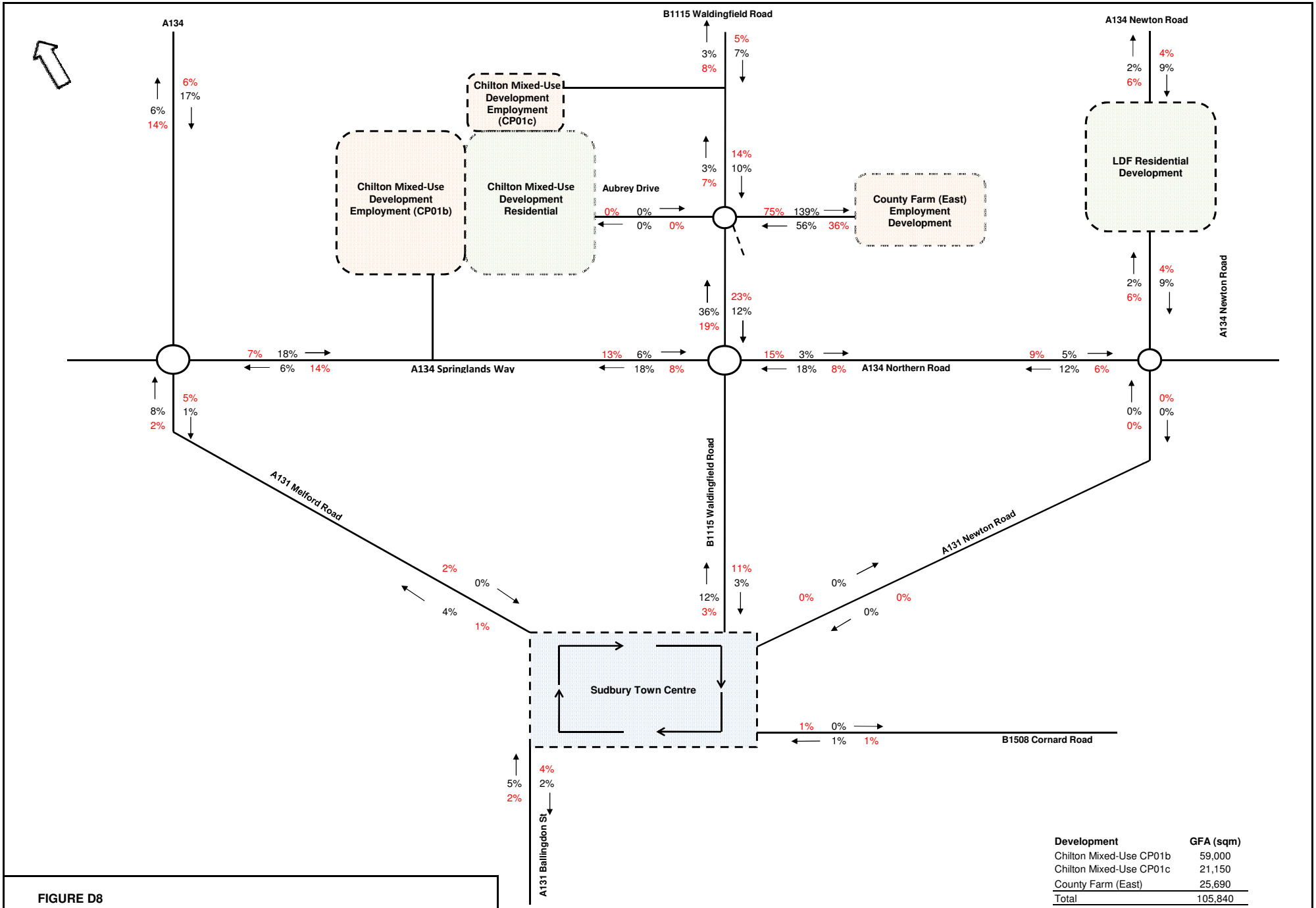


FIGURE D7
EMPLOYMENT SENSITIVITY TEST B (MEDIUM) - DEVELOPMENT FLOWS



Development	GFA (sqm)
Chilton Mixed-Use CP01b	59,000
Chilton Mixed-Use CP01c	21,150
County Farm (East)	25,690
Total	105,840

FIGURE D8
EMPLOYMENT SENSITIVITY TEST B (MEDIUM) - LINK % IMPACT

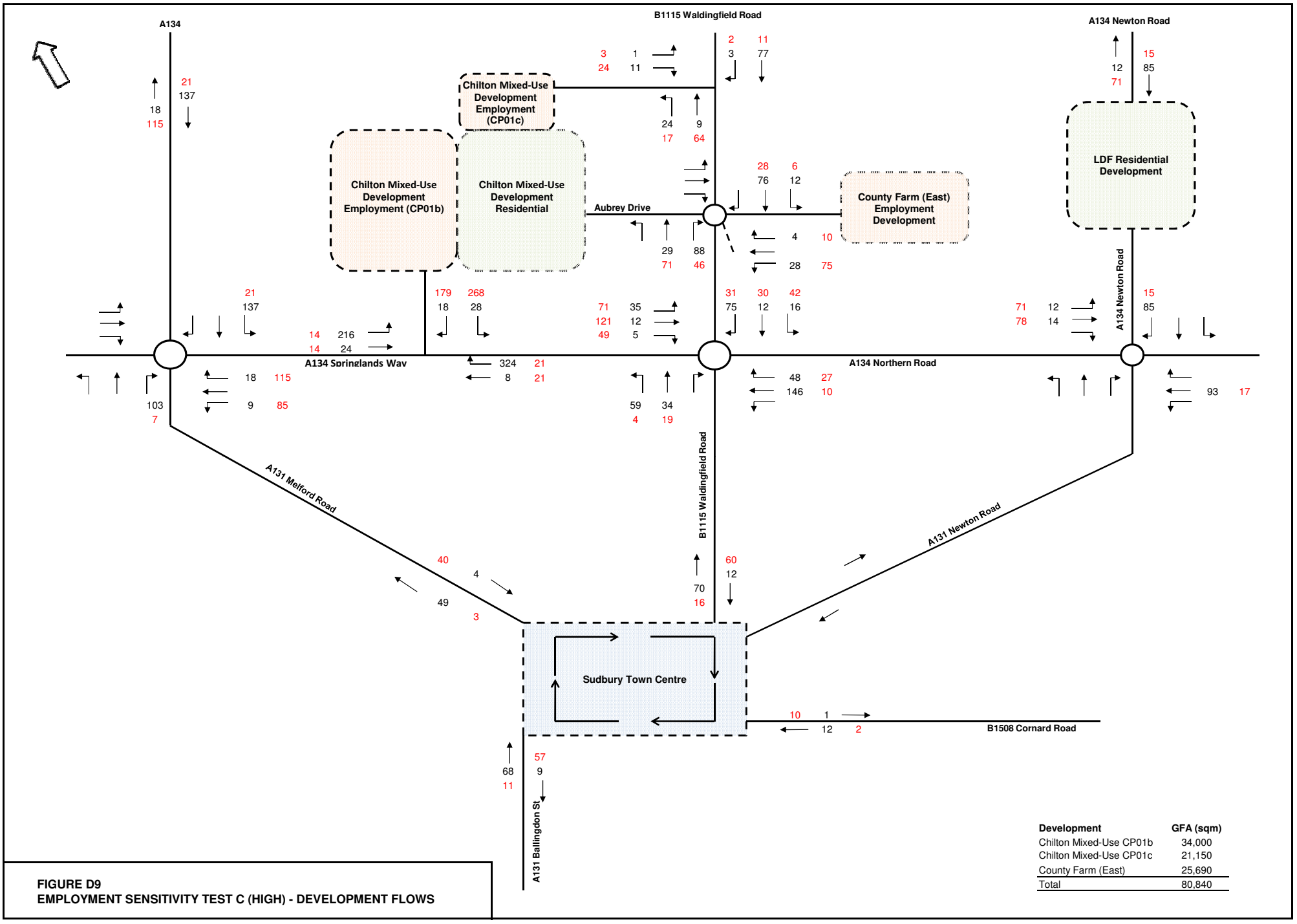
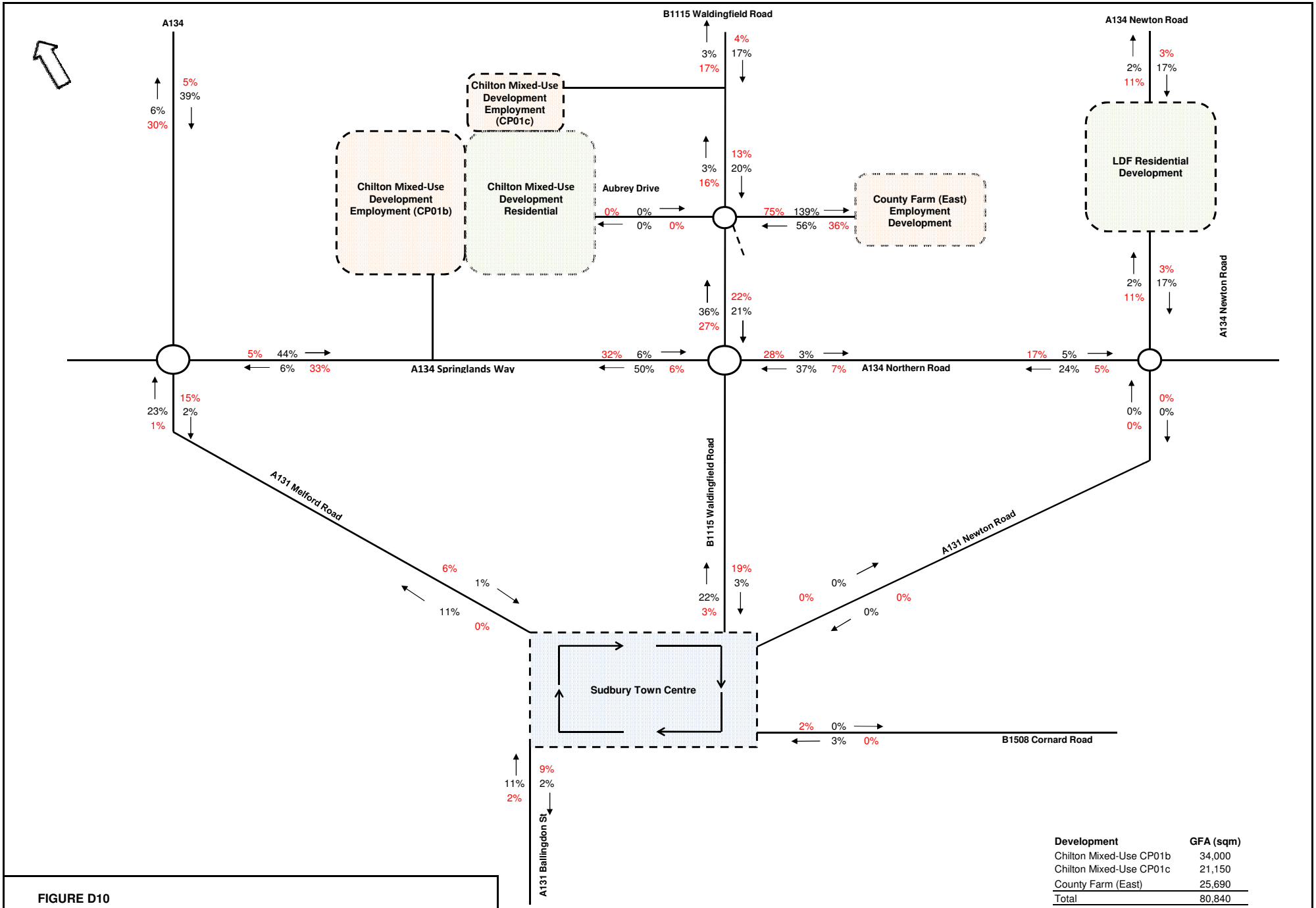


FIGURE D9
EMPLOYMENT SENSITIVITY TEST C (HIGH) - DEVELOPMENT FLOWS



Development	GFA (sqm)
Chilton Mixed-Use CP01b	34,000
Chilton Mixed-Use CP01c	21,150
County Farm (East)	25,690
Total	80,840

FIGURE D10
EMPLOYMENT SENSITIVITY TEST C (HIGH) - LINK % IMPACT

Appendix E – Existing Off-street Parking Provision

Appendix E - Off-street Public Car Parks in Sudbury

Type	Car Park	Standard Bays	Disabled	Parent / Toddler	Motorcycle	Coach / Lorry	Taxi	Total
Short Stay	North Street	182	5	4	1	0	0	192
	Girling Street	67	4	4	3	0	0	78
	Great Eastern Road (Roys)	256	10	4	0	0	0	270
	Sub-total	*505*	*19*	*12*	*4*	*0*	*0*	*540*
Long Stay (with charges)	Station Road (Kingfisher)	287	6	4	0	12	0	309
	Station Road (Railway Station)	131	3	4	0	0	2	140
	Sub-total	*418*	*9*	*8*	*0*	*12*	*2*	*449*
Long stay (free)	Stour Street	38	1	0	0	0	0	39
	Quay Lane	19	0	0	0	0	0	19
	Mill Lane	21	2	0	0	0	0	23
	Ballingdon Street	13	1	0	0	0	0	14
	Sub-total	*91*	*4*	*0*	*0*	*0*	*0*	*95*
Total		**1014**	**32**	**20**	**4**	**12**	**2**	**1084**

Sources: Sudbury and Hadleigh Town Centre Health Check Report – July 2008
Babergh District Council Website – July 2011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Great Fullingpit Meadow
The Mill Hotel
Freemen's Great Common
Freemen's Little Common
Ballingdon Street
Mill Lane
Stour Street
Quay Lane
Recn Gd
Pav
Works
Friar's Meadow
Station Road
Gt. Eastern Road
The Station
Leisure Centre
Belle Vue
Belle Vue Park
North Street
Girling Street
Car Park
Govt Office
Offices
Bus Sta
Liby
Tel Ex
PO
TH
F Sta
Hosp
Hospl
Sch
Crt
Pol Sta
Amb Sta
PW
A131
B1115
B1508
GAINSBOROUGH ROAD
GIRLING STREET
EAST STREET
NORTH STREET
MARKET HILL
KING STREET
GAINSBOROUGH STREET
STOUR STREET
CROSS STREET
B1115 CHURCH STREET
FRIARS STREET
STATION ROAD
STATION RD
BEACONSFIELD ROAD
CROFT ROAD
NEW ST
PRINCE ST
SUFFOLK ROAD
QUEENS CLOSE
UPPER EAST ST
NEWMAN'S ROAD
MINDEN ROAD
BELLE VUE ROAD
GAOL LANE
BURKITTS LANE
WEAVERS LANE
WALNUT TREE LANE
GREGORY ST
PLOUGH LANE
SCHOOL ST
CHRISTOPHER LANE
HAMILTON ROAD
FRANCIS RD
MEADOW LANE
EDGWORTH ROAD
BULLOCKS LANE
BLACKFRIARS
QUAY LANE

Appendix F – Trip Generation Analysis – Main Test (Mode Shift)

F1 Potential Mode Shift

F1.1 Residential

The proposed measures identified in the emerging Sudbury Transport Strategy will focus on achieving modal shift away from car use, particularly for shorter journeys, including those that originate and end within Sudbury.

From the 2001 Census data, the proportions of car driver journeys to work to wards within Sudbury are as follows:

- Chilton Growth Area (Sudbury North Ward) – 43.3%
- East of Sudbury (Great Cornard North Ward) – 52.6%

These have been used as a proxy for all external residential trips from the two residential developments, with the exception of education. As set out in the main report, there is the potential for reducing these local car driver trips by up to 26% given appropriate infrastructure improvements. While the reduction in car trips for work, shopping and other purposes has been factored by the proportion of trips internal to Sudbury (as identified in journey to work data), it is assumed that the vast majority of education trips will be maintained within Sudbury and as such, the reduction has been applied to all education car trips.

Given the measures proposed, it is anticipated that the mode shift from car driver will mostly be to cycling and bus modes, with the extent of this likely to vary by journey purpose. For instance, cycling would be considered to be a more likely alternative for journeys to school than perhaps shopping trips. The proportions of these car driver journeys transferring to each mode that have been assumed are set out in Table F1 below.

Table F1 – Split of Mode Shift Residential Car Driver Journeys to Sustainable Modes by Journey Purpose (Infrastructural)

Mode	Work	Education	Shopping	Other
Walk	20%	20%	25%	20%
Bicycle	40%	50%	30%	40%
Bus	40%	30%	45%	40%
Total	***100%***	***100%***	***100%***	***100%***

In addition to local journeys, the improvement in inter-urban bus services, in the form of the increased frequencies, RTPI and an improved interchange facility with the new bus station, would be expected to lead to mode shift from car driver to bus modes for some trips extending beyond Sudbury. The two bus services which are most likely to be improved along these lines are the 753 between Colchester and Bury St Edmunds and the 91 between Sudbury and Ipswich.

To identify the number of journeys which could be affected, wards with major settlements on these routes have been identified and the proportion of car driver trips to these wards from both Sudbury North and Great Cornard North wards as a proportion of all car driver journeys to these wards has been taken from travel to work 2001 Census data:

- Chilton Growth Area (Sudbury North Ward) – 17.1%
- East of Sudbury (Great Cornard North Ward) – 18.0%

It has been assumed that these improvements will lead to at least 10% of car driver trips along these routes for all journey purposes transferring to bus use.

It is also anticipated that the introduction of Influencing Transport Behaviour Schemes will lead to additional mode shift, beyond that identified above relating to the infrastructural improvements. This will focus on encouraging more sustainable travel patterns by ensuring people are fully aware of their travel options, providing relevant information relating to alternative modes of travel and providing suitable incentives where appropriate. DfT's 'Smarter Choices – Changing the way we travel' report states that "Personalised travel planning (PTP) initiatives typically report

reductions in car use of 7% to 15% in urban areas and 2% to 6% in rural or smaller urban areas." It is anticipated that PTP will form part of a wider range of Travel Planning initiatives on the site. It is considered that PTP will compliment the other measures that have been identified and help to maximise their impact. Given the potential for the double counting of mode shift, a conservative 6% reduction in external car trips generated by the development has been assumed.

It is believed that this shift from car driver trips is likely to be split more evenly across walking, cycling and bus travel, with people also encouraged to car share. The proportion of the reduction in car driver trips assigned to each of these modes is shown in the table below.

Table F2 – Split of Mode Shift Residential Car Driver Journeys to Sustainable Modes by Journey Purpose (Travel Planning)

Mode	All Purposes
Walk	30%
Bicycle	30%
Bus	30%
Car Passenger	10%
Total	***100%***

Table F3 below identifies the external trip rates by purpose and by mode for the Chilton growth area prior to mode shift, with Tables F4 and F5 showing the subsequent change in the trips rates and trip generation following the mode shift. For the East of Sudbury Growth Area, this information is shown in Tables F6 – F8.

Table F3 – Chilton Growth Area Residential Development – Multi-Modal External Trip Rates Prior to Mode Shift (per dwelling)

Mode	Work						Education						Shopping						Other						Total					
	AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Walk	0.012	0.038	0.049	0.038	0.026	0.064	0.012	0.037	0.049	0.002	0.001	0.004	0.002	0.006	0.007	0.011	0.008	0.019	0.009	0.030	0.039	0.048	0.033	0.082	0.034	0.110	0.144	0.100	0.069	0.169
Bicycle	0.002	0.006	0.008	0.006	0.004	0.011	0.002	0.006	0.008	0.000	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003	0.002	0.005	0.007	0.008	0.006	0.014	0.006	0.019	0.024	0.017	0.012	0.029
Car/van driver	0.035	0.113	0.148	0.115	0.079	0.193	0.035	0.112	0.147	0.006	0.004	0.011	0.005	0.017	0.022	0.034	0.024	0.058	0.027	0.089	0.116	0.145	0.100	0.245	0.102	0.331	0.433	0.301	0.206	0.507
Car/van passenger	0.005	0.015	0.019	0.015	0.010	0.025	0.005	0.015	0.019	0.001	0.001	0.001	0.001	0.002	0.003	0.004	0.003	0.008	0.004	0.012	0.015	0.019	0.013	0.032	0.013	0.043	0.056	0.039	0.027	0.066
Motorcycle	0.000	0.001	0.002	0.001	0.001	0.002	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003	0.001	0.004	0.006	0.004	0.003	0.007
Bus	0.001	0.004	0.006	0.004	0.003	0.007	0.001	0.004	0.006	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.001	0.002	0.001	0.003	0.004	0.006	0.004	0.009	0.004	0.013	0.017	0.012	0.008	0.020
Rail	0.001	0.003	0.004	0.003	0.002	0.005	0.001	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001	0.002	0.003	0.004	0.003	0.007	0.003	0.009	0.012	0.008	0.006	0.014
Other	0.000	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.001	0.002	0.001	0.003	0.004	0.003	0.002	0.005
All modes	***0.056***	***0.181***	***0.237***	***0.184***	***0.126***	***0.311***	***0.056***	***0.180***	***0.236***	***0.010***	***0.007***	***0.017***	***0.008***	***0.027***	***0.036***	***0.055***	***0.038***	***0.093***	***0.044***	***0.143***	***0.187***	***0.234***	***0.160***	***0.394***	***0.164***	***0.532***	***0.696***	***0.483***	***0.332***	***0.815***

Table F4 – Chilton Growth Area Residential Development – Multi-Modal External Trip Rates Post Mode Shift (per dwelling)

Mode	Work						Education						Shopping						Other						Total					
	AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Walk	0.012	0.040	0.052	0.041	0.028	0.069	0.013	0.043	0.057	0.002	0.002	0.004	0.002	0.006	0.008	0.012	0.008	0.021	0.010	0.032	0.041	0.052	0.035	0.087	0.037	0.121	0.158	0.107	0.074	0.181
Bicycle	0.004	0.011	0.015	0.012	0.008	0.020	0.006	0.021	0.027	0.001	0.001	0.002	0.000	0.002	0.002	0.003	0.002	0.005	0.003	0.009	0.012	0.015	0.010	0.025	0.013	0.043	0.056	0.031	0.021	0.052
Car/van driver	0.030	0.098	0.129	0.100	0.068	0.168	0.025	0.081	0.106	0.005	0.003	0.008	0.005	0.015	0.019	0.030	0.020	0.050	0.024	0.077	0.101	0.126	0.087	0.213	0.084	0.271	0.355	0.261	0.179	0.440
Car/van passenger	0.005	0.015	0.019	0.015	0.010	0.025	0.005	0.015	0.019	0.001	0.001	0.001	0.001	0.002	0.003	0.004	0.003	0.008	0.004	0.012	0.015	0.019	0.013	0.032	0.013	0.043	0.056	0.039	0.027	0.066
Motorcycle	0.000	0.001	0.002	0.001	0.001	0.002	0.000	0.001	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003	0.001	0.004	0.006	0.004	0.003	0.007
Bus	0.004	0.011	0.015	0.012	0.008	0.019	0.005	0.015	0.020	0.001	0.001	0.001	0.001	0.002	0.002	0.004	0.003	0.006	0.003	0.009	0.012	0.015	0.010	0.025	0.011	0.037	0.049	0.031	0.021	0.052
Rail	0.001	0.003	0.004	0.003	0.002	0.005	0.001	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.001	0.001	0.001	0.002	0.001	0.002	0.003	0.004	0.003	0.007	0.003	0.009	0.012	0.008	0.006	0.014
Other	0.000	0.001	0.001	0.001	0.001	0.002	0.000	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.001	0.001	0.002	0.001	0.003	0.004	0.003	0.002	0.005
All modes	***0.056***	***0.181***	***0.237***	***0.184***	***0.126***	***0.311***	***0.056***	***0.180***	***0.236***	***0.010***	***0.007***	***0.017***	***0.008***	***0.027***	***0.036***	***0.055***	***0.038***	***0.093***	***0.044***	***0.143***	***0.187***	***0.234***	***0.160***	***0.394***	***0.164***	***0.532***	***0.696***	***0.483***	***0.332***	***0.815***

Table F5 – Chilton Growth Area Residential Development – Multi-Modal External Trip Generation with Mode Shift

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	41	132	173	117	81	198
Bicycle	15	50	66	37	25	62
Car/van driver	83	268	351	257	177	434
Car/van passenger	15	47	61	43	29	72
Motorcycle	1	4	6	4	3	7
Bus	14	44	58	37	25	63
Rail	3	9	12	9	6	15
Other	1	3	4	3	2	5
All modes	***173***	***559***	***731***	***507***	***348***	***856***

Table F6 – East of Sudbury Residential Development – Multi-Modal External Trip Rates Prior to Mode Shift (per dwelling)

Mode	Work						Education						Shopping						Other						Total					
	AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Walk	0.011	0.035	0.046	0.036	0.025	0.060	0.018	0.060	0.078	0.003	0.002	0.006	0.002	0.005	0.007	0.010	0.007	0.017	0.007	0.024	0.031	0.039	0.026	0.065	0.038	0.124	0.162	0.088	0.060	0.148
Bicycle	0.003	0.009	0.012	0.009	0.006	0.016	0.005	0.016	0.020	0.001	0.001	0.001	0.000	0.001	0.002	0.003	0.002	0.005	0.002	0.006	0.008	0.010	0.007	0.017	0.010	0.032	0.042	0.023	0.016	0.039
Car/van driver	0.041	0.134	0.175	0.136	0.093	0.229	0.070	0.226	0.296	0.013	0.009	0.022	0.006	0.019	0.025	0.039	0.027	0.066	0.028	0.090	0.117	0.147	0.101	0.247	0.145	0.469	0.614	0.334	0.229	0.563
Car/van passenger	0.006	0.021	0.027	0.021	0.014	0.035	0.011	0.035	0.046	0.002	0.001	0.003	0.001	0.003	0.004	0.006	0.004	0.010	0.004	0.014	0.018	0.023	0.015	0.038	0.022	0.072	0.094	0.051	0.035	0.087
Motorcycle	0.001	0.002	0.003	0.002	0.001	0.003	0.001	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.001	0.002	0.002	0.001	0.004	0.002	0.007	0.009	0.005	0.003	0.008
Bus	0.002	0.008	0.010	0.008	0.005	0.013	0.004	0.013	0.017	0.001	0.001	0.001	0.000	0.001	0.001	0.002	0.002	0.004	0.002	0.005	0.007	0.009	0.006	0.014	0.008	0.027	0.036	0.019	0.013	0.033
Rail	0.000	0.002	0.002	0.002	0.001	0.003	0.001	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003	0.002	0.005	0.007	0.004	0.003	0.006
Other	0.001	0.003	0.004	0.003	0.002	0.005	0.002	0.005	0.007	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.001	0.002	0.001	0.002	0.003	0.003	0.002	0.006	0.003	0.011	0.015	0.008	0.005	0.013
All modes	***0.066***	***0.213***	***0.279***	***0.216***	***0.148***	***0.365***	***0.112***	***0.361***	***0.472***	***0.020***	***0.014***	***0.034***	***0.009***	***0.031***	***0.040***	***0.062***	***0.043***	***0.105***	***0.044***	***0.143***	***0.187***	***0.234***	***0.160***	***0.394***	***0.231***	***0.747***	***0.978***	***0.532***	***0.365***	***0.898***

Table F7 – East of Sudbury Area Residential Development – Multi-Modal External Trip Rates Post Mode Shift (per dwelling)

Mode	Work						Education						Shopping						Other						Total					
	AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak			AM Peak			PM Peak		
	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
Walk	0.012	0.039	0.051	0.039	0.027	0.067	0.022	0.071	0.094	0.004	0.003	0.007	0.002	0.006	0.007	0.012	0.008	0.020	0.008	0.026	0.034	0.043	0.029	0.072	0.044	0.142	0.186	0.098	0.067	0.165
Bicycle	0.005	0.016	0.022	0.017	0.011	0.028	0.014	0.045	0.059	0.003	0.002	0.004	0.001	0.002	0.003	0.004	0.003	0.007	0.003	0.011	0.014	0.018	0.012	0.031	0.023	0.075	0.098	0.042	0.029	0.070
Car/van driver	0.035	0.113	0.148	0.115	0.079	0.193	0.051	0.163	0.214	0.009	0.006	0.016	0.005	0.016	0.021	0.033	0.023	0.055	0.023	0.076	0.099	0.124	0.085	0.209	0.114	0.368	0.482	0.281	0.193	0.473
Car/van passenger	0.006	0.021	0.027	0.021	0.014	0.035	0.011	0.035	0.046	0.002	0.001	0.003	0.001	0.003	0.004	0.006	0.004	0.010	0.004	0.014	0.018	0.023	0.015	0.038	0.022	0.072	0.094	0.051	0.035	0.087
Motorcycle	0.001	0.002	0.003	0.002	0.001	0.003	0.001	0.003	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.000	0.001	0.002	0.002	0.001	0.004	0.002	0.007	0.009	0.005	0.003	0.008
Bus	0.005	0.017	0.023	0.018	0.012	0.030	0.011	0.035	0.046	0.002	0.001	0.003	0.001	0.003	0.003	0.005	0.004	0.009	0.004	0.012	0.015	0.019	0.013	0.032	0.021	0.067	0.087	0.044	0.030	0.075
Rail	0.000	0.002	0.002	0.002	0.001	0.003	0.001	0.003	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.001	0.001	0.002	0.001	0.003	0.002	0.005	0.007	0.004	0.003	0.006
Other	0.001	0.003	0.004	0.003	0.002	0.005	0.002	0.005	0.007	0.000	0.000	0.001	0.000	0.000	0.001	0.001	0.001	0.002	0.001	0.002	0.003	0.003	0.002	0.006	0.003	0.011	0.015	0.008	0.005	0.013
All modes	***0.066***	***0.213***	***0.279***	***0.216***	***0.148***	***0.365***	***0.112***	***0.361***	***0.472***	***0.020***	***0.014***	***0.034***	***0.009***	***0.031***	***0.040***	***0.062***	***0.043***	***0.105***	***0.044***	***0.143***	***0.187***	***0.234***	***0.160***	***0.394***	***0.231***	***0.747***	***0.978***	***0.532***	***0.365***	***0.898***

Table F8 – East of Sudbury Residential Development – Multi-Modal External Trip Generation with Mode Shift

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	23	74	97	51	35	87
Bicycle	13	41	53	23	16	39
Car/van driver	54	173	227	132	91	222
Car/van passenger	11	37	49	27	18	45
Motorcycle	1	3	4	2	2	4
Bus	11	37	48	25	17	42
Rail	1	3	4	2	1	3
Other	2	6	7	4	3	7
All modes	***115***	***374***	***489***	***266***	***183***	***449***

F1.2 Employment

As with the residential uses, the proposed measures are anticipated to have greatest effect on movements between the growth areas and other destinations within Sudbury.

From the 2001 Census data, the proportions of car driver journeys to work to wards within Sudbury are as follows:

- Chilton Growth Area (Sudbury North Ward) – 42.7%
- County Farm (East) (Sudbury East Ward) – 41.4%

It has been assumed that a 26% reduction in these shorter car driver trips is possible. Again, reflecting the proposed measures, it is anticipated that the majority of these trips would be likely to be made by cycle or bus, with Table F9 setting out the assumed split of the reduction in car driver trips for each mode.

Table F9 – Split of Mode Shift Employment Car Driver Journeys to Sustainable Modes (Infrastructural)

Mode	All Purposes
Walk	20%
Bicycle	40%
Bus	40%
Total	***100%***

The improvements to intra-urban bus services would be expected to have a similar impact on employment trips to that identified for residential movements. Based on the same approach taken for residential mode share, the following proportions of car driver journeys are from wards which are directly affected by these proposals and it has been assumed that 10% of these trips could switch to bus given improvements in frequency and infrastructure:

- Chilton Growth Area (Sudbury North Ward) – 17.3%
- County Farm (East) (Sudbury East Ward) – 18.0%

In addition to this, Workplace Travel Plans will be expected to be implemented by employers on the development. DfT's Smarter Choices report notes that "Workplace Travel Plans typically reduce car driving by between 10% and 30%, though the best ones achieve significantly more than that." Given that an allowance has already been made for mode shift related to infrastructural improvements, a conservative 10% reduction in employment car driver trips has been applied to reflect workplace travel planning. This has been assigned to sustainable modes in line with the approach taken for residential trips, as set out in Table F10 below.

Table F10 – Split of Mode Shift Employment Car Driver Journeys to Sustainable Modes (Travel Planning)

Mode	All Purposes
Walk	30%
Bicycle	30%
Bus	30%
Car Passenger	10%
Total	***100%***

Table F11 below identifies the trip rates by mode for the Chilton growth area employment uses following the application of the mode shift, with Table F12 indicating the trip generation and the revised modal split of employment trips for this growth area. The relevant information for the County Farm (East) development is shown in Tables F13 – F14.

Table F11 – Chilton Growth Area Employment Development – Multi-Modal External Trip Rates with Mode Shift (per 100sqm)

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	0.210	0.036	0.246	0.025	0.167	0.193
Bicycle	0.074	0.013	0.087	0.009	0.059	0.068
Car/van driver	0.562	0.100	0.662	0.073	0.450	0.523
Car/van passenger	0.077	0.013	0.091	0.009	0.062	0.071
Motorcycle	0.006	0.001	0.007	0.001	0.005	0.006
Bus	0.062	0.011	0.073	0.008	0.049	0.057
Rail	0.006	0.001	0.007	0.000	0.005	0.005
Other	0.009	0.002	0.011	0.001	0.007	0.009
All modes	***1.006***	***0.176***	***1.182***	***0.127***	***0.805***	***0.932***

Table F12 – Chilton Growth Area Employment Development – Multi-Modal External Trip Generation with Mode Shift

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	21%	187	32	219	23	149	172
Bicycle	7%	66	11	77	8	53	61
Car/van driver	55%	500	89	589	65	401	466
Car/van passenger	8%	69	12	81	8	55	63
Motorcycle	1%	5	1	6	1	4	5
Bus	7%	55	9	65	7	44	51
Rail	1%	5	1	6	0	4	4
Other	1%	8	2	10	1	7	8
All modes	**100%**	***897***	***156***	***1053***	***113***	***717***	***830***

Table F13 – County Farm (East) Employment Development – Multi-Modal External Trip Rates with Mode Shift (per 100sqm)

Mode	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Walk	0.029	0.009	0.038	0.015	0.025	0.040
Bicycle	0.016	0.005	0.021	0.008	0.014	0.022
Car/van driver	0.088	0.028	0.116	0.046	0.075	0.121
Car/van passenger	0.014	0.005	0.019	0.008	0.012	0.020
Motorcycle	0.002	0.001	0.003	0.001	0.001	0.002
Bus	0.014	0.004	0.018	0.007	0.012	0.019
Rail	0.001	0.000	0.001	0.000	0.001	0.001
Other	0.001	0.000	0.001	0.001	0.001	0.002
All modes	***0.165***	***0.052***	***0.217***	***0.086***	***0.141***	***0.227***

Table F14 – County Farm (East) Employment Development – Multi-Modal External Trip Generation with Mode Shift

Mode	Mode Share	AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Walk	17%	26	8	34	13	22	35
Bicycle	10%	14	5	19	7	12	19
Car/van driver	53%	79	25	104	41	67	108
Car/van passenger	9%	13	4	17	7	11	18
Motorcycle	1%	2	0	2	1	1	2
Bus	8%	13	4	17	7	11	18
Rail	1%	1	0	1	0	1	1
Other	1%	1	0	1	1	1	2
All modes	***100%***	***149***	***46***	***195***	***77***	***126***	***202***

F1.3 External Combined Development Trips

Table F15 below compares the overall number of external vehicle trips associated with the combined growth areas for the Main Test scenario, before and after the mode shift identified above.

Table F15 – Combined Growth Trip Generation – Local Containment and Mode Shift Impact (Car Driver)

Scenario	AM Peak			PM Peak		
	In	Out	Total	In	Out	Total
Base Trip Generation	961	905	1866	700	976	1676
Post-mode shift and local containment	716	555	1271	495	735	1231
Net Impact (absolute)	-245	-350	-595	-205	-240	-445
Net Impact (%)	-25%	-39%	-32%	-29%	-25%	-27%

F2 Trip Distribution and Assignment

F2.1 Distribution of Trips

The strategy identified above would be expected to result in mode shift being primarily, although not totally, focussed on local trips contained within Sudbury and on those along key bus routes. As such, this mode shift will be expected to result in changes to the distribution of car trips generated by the different growth areas from that identified in Appendix C, calculated from the 2001 Census Journey to Work data.

To reflect this change, the proportion of trips to / from local Sudbury and Great Cornard Wards has been reduced by 26%, with a 10% reduction in the proportion of car driver trips to / from the wards with major settlements on the 91 and 753 bus routes. The adjusted trip distribution is shown in Table F16.

Table F16 – Adjusted Trip Generation Distribution for Mode Shift

	Growth Area	Chilton Growth Area		County Farm East	East of Sudbury
	Ward	Sudbury North		Sudbury East	Gt Cornard North
Direction	**Corridor**	***Res***	***Emp***	***Emp***	***Res***
North	A134 Towards Bury St Edmunds	22%	24%	20%	16%
North East	B1115 - Waldingfield Rd	10%	13%	13%	8%
East	A134 Towards Hadleigh, Ipswich and Colchester	15%	14%	19%	17%
South East	B1508 Towards Colchester	1%	2%	1%	1%
South	A131 Towards Halstead and Braintree	16%	11%	12%	12%
Sudbury North	Various	11%	17%	6%	3%
Sudbury South	Town Centre Gyratory	11%	5%	4%	16%
Sudbury East	Various	12%	3%	9%	15%
Great Cornard	Shawlands Avenue	3%	11%	16%	12%
Total	**-**	***100%***	***100%***	***100%***	***100%***

2.2 Assignment of Trips

The assignment of trips is not anticipated to change as a result of the mode shift and as such would reflect the assignments identified in Appendix C.