Appendix **B**

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Land at Chase Farm and Land West and North-East of High Street, Arlesey

Interim Transport Assessment

Revision A
February2014

Contents

Revision A

This document has been updated to reflect additional information/clarification requested by local residents and stakeholder groups during the consultation period.

For ease of reference additional and amended text is presented in green typeface.

Issue	Date	Prepared By	Reviewed By	Approved By
1	30/09/2013	ASB	GBR	GBR
Rev A	04/02/2014	GBR	GBR	GBR

1.0 Introduction

1.1 This Interim Transport Assessment (ITA) has been prepared by Woods Hardwick Infrastructure LLP on behalf of Central Bedfordshire Council(CBC) Property Assetsin relation to a site known as Arlesey Cross, Arlesey, Bedfordshire.

1.2 The site is allocated for a mixed-use development consisting of a minimum of 1,000 dwellings and 10ha of employment land. This allocation is set out in Policy MA8 of the Central Bedfordshire (North) Site Allocations Development Plan Document (April 2011) which gives details of the specific requirements for development on this site. The site is allocated as 'Land at Chase Farm and Land West and North-East of High Street, Arlesey', however, for the purpose of this document the site is referred to as 'Arlesey Cross'.

1.3 A Masterplan Document has been prepared by Woods Hardwick Planning and Hankinson Duckett Associates in order to guide the development. This ITA is a standalone document that has informed the Masterplan document, focusing solely on the transportation opportunities and impacts of the proposals; a non-technical summary has been included as an appendix to the Masterplan. A full Transport Assessment (TA) will be prepared and submitted at such time as a planning application is submitted in relation to the Arlesey Cross site.

1.4 The site consists of one parcel to the west of High Street which has been assumed will provide in the region of 400 dwellings and a second parcel to the east of High Street, which will provide in the region of 850 residential dwellings; areas of employment; a First School; community buildings;a supermarket and retail units;sports pitches; and areas of public open space.

1.5 Following scoping discussions with the local highway authority,Central Bedfordshire Council (CBC), and the Highways Agency (HA) regarding this ITA and a future TA in support of a planning application, the proposal's impact on the followinglocations has been considered:

- A507 Arlesey Road/Hitchin Road (roundabout south of Henlow)
- A507 Arlesey Road/Stotfold Road (roundabout)
- A507/Hitchin Road (roundabout south of Stotfold)
- Hitchin Road/Eliot Way (roundabout)
- A507/A1(M) (grade-separated roundabout)
- A1/B658 (roundabout)

1.6 Following consultation on this ITA, in order to address the concerns of local residents and stakeholder groups, the study has been extended to include an assessment of the capacity of the Hitchin Road link to the south of '5-ways' junction.

1.7 The document describes the results of initial capacity assessments undertaken at the locations listed above. The assessments account for: existing traffic; projected network traffic growth; projected traffic generation of other committed developments; and a robust estimation of the likely traffic flows which will be generated by the proposed development.

1.8 The report addressees the transportation and highway issues raised by the development and concludes that: the site lies in a highly sustainable location; the provision of onsite services and facilities will enhance the sustainability credentials of the surrounding area; the proposed development will not result in any insurmountable impact on the local highway network; and that no issues in terms of highway safety will arise as a result of the proposed development.

1.9 The purpose of this document is to gauge the impact of the proposed development on the surrounding highway network and to identify sustainable alternatives to single occupancy car use which can be utilised by residents of the site. The ITA is written in accordance with the Department for Transport's (DfT) 'Guidance on Transport Assessment' (March 2007) and with due regard to relevant planning policy both at a national and a local level.

2.0 Site Location, Development Proposal and Existing Local Highway Network

2.1 Arlesey is located in Central Bedfordshire district and is easily accessible from Letchworth Garden City, Hitchin and Biggleswade which lie approximately 5km south east, 7km south and 7km north respectively.

2.2 Arlesey is accessible from all directions. The A1(M), to the east of the town, offers access to the north and south including London, Letchworth and Stevenage.

2.3 The proposed scheme comprises two parcels of land either side of High Street. The western parcel has been assumed to be capable of accommodating in the region of 400 residential dwellings, and the second parcel to the east of High Street, could provide approximately 850 residential dwellings; areas of employment; a First School; community buildings; and a small supermarket.

2.4 The two parcels lie either side of High Street. The western parcel lies to the north and west of the southern part of Arlesey, and is abutted by the East Coast Mainline on the western edge and on all other sides by existing housing.

2.5 The eastern parcel lies directly to the east of the northern part of Arlesey, and is abutted by Stotfold Road to the north, the A507 to the east, farmland to the south and housing to the west.

2.6 The western parcel will be accessible from two principal junctions on High Street: one at the northern end, which will also act as an access for the eastern parcel ('Central Access') and another access further south ('Western Access'). A link will be provided through the site connecting the two accesses, thereby providing relief to High Street. The western access is shown on the concept plan as being taken off the 5 ways junction to the south of the allocation via a junction, which already has planning permission. Additional secondary access points are also shown linking High Street and the western land at various points in order to provide connectivity.

2.7 The eastern parcel will be accessed by the aforementioned Central Access; through a roundabout on the A507 to the east of the parcel ('Eastern Access'); and also through an access on Stotfold Road ('Stotfold Road Access'). The internal roads to the Stotfold Road access will be designed such that it will be an inefficient way to exit the site for all but those who live closest to it.

2.8 The site will be accessible by non-vehicular modes with suitable provision for cyclists and pedestrians being provided at the aforementioned accesses, as well as secondary access points, promoting connectivity between the site and the existing areas of Arlesey.

3.0 Transportation Policy

3.1 This ITA considers the guidance set out in the DfT document 'Guidance on Transport Assessment' published in March 2007. In accordance with this guidance a review of relevant transportation policy at a national, regional and local level is included in this section.

3.2 The National Planning Policy Framework (NPPF) (March 2012) replaces the previous transport related guidance set out in Planning Policy Guidance 13 (PPG13), published in March 2001 (updated January 2011). The NPPF aims to bring about sustainable development and create positive growth – making economic, environmental and social progress for this and future generations.

3.3 Section 4 of NPPF focuses on promoting sustainable transport. Paragraph 30 states that encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion. In preparing Local Plans, local planning authorities should therefore support a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport.

3.4 Paragraph 32 outlines that all developments that generate significant amounts of movement should be supported by a Transport Statement or Transport Assessment and that plans and decisions should take account of whether:

- The opportunities for sustainable transport modes have been taken up depending on the nature and location of the site, to reduce the need for major transport infrastructure.
- Safe and suitable access to the site can be achieved for all people.
- Improvements can be undertaken within the transport network that cost-effectively limit the significant impacts of the development. Development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe.

3.5 Paragraphs 34-35 describe how developments which generate significant traffic movements should be located where the need to travel will be minimised and the use of sustainable transport modes can be maximised, therefore developments should be located and designed where practical to:

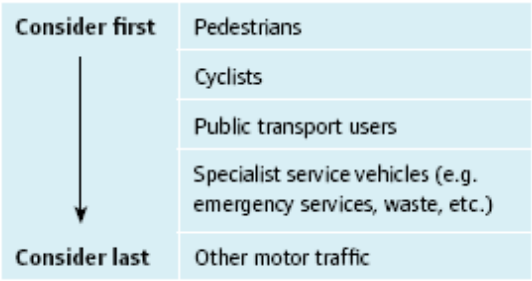
- Accommodate the efficient delivery of goods and supplies.
- Give priority to pedestrian and cycle movements, and have access to high quality public transport facilities.
- Create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones.
- Incorporate facilities for charging plug-in and other ultra-low emission vehicles.
- Consider the needs of people with disabilities by all modes of transport.

3.6 The requirement for developers (in partnership with local authorities) to submit plans for the implementation and maintenance of measures that will minimise the traffic generated by their development and that encourage walking and cycling is also outlined in paragraph 33 of the DfT Circular 02/07.

3.7 The DfT's Manual for Streets, (MfS) (2007) also recognises the significance of the design of a development in encouraging sustainable modes of transport as paragraph 2.2.5 states that: "attractive and well-connected permeable street networks encourage more people to walk and cycle to local destinations, improving health while reducing motor traffic, energy use and pollution".

3.8 Walking is widely considered to be the most important mode of travel at the local level and offers the greatest potential to replace short car trips, particularly for journeys that are less than 2km. It is also important to provide sustainable routes for journeys of greater distances through the provision of a high quality, safe, secure and reliable network of routes, with good interchanges, which matches the pattern of travel demand in order to maximise public transport patronage.

Figure 3.1



Source: Department for Transport Manual for Streets 2007

3.9 The 'Road User Hierarchy' as shown above (Figure 3.1) and as described in MfS and 'Building Sustainable Transport into New Developments' (2008) also puts forward walking and cycling as the two preferred modes of travel, followed by public transport. It is recommended that where possible a scheme should follow this proposed hierarchy.

3.10 As advised in MfS and summarised in Manual for Streets 2 (MfS2) (September 2010) encouraging walking has many benefits, including reductions in vehicle emissions and traffic collisions, and improvements in personal health. In summary the documents advise that:

- The propensity to walk is influenced not only by distance, but also by the quality of the walking experience.
- Good sightlines and visibility towards destinations and intermediate points are important for way-finding and personal security.
- Pedestrian routes need to be direct and match desire lines as closely as possible, including across junctions, unless site-specific reasons preclude it.
- Pedestrian networks need to be connected. Where routes are separated by heavily-trafficked routes, appropriate surface-level crossings should be provided where practicable.
- Pedestrians should generally be accommodated on multifunctional streets rather than on routes segregated from motor traffic. In situations where it is appropriate to provide traffic-free routes they should be short, well-overlooked and relatively wide.
- Obstructions on the footway should be minimised. Street furniture on footways can be a hazard for vulnerable people.
- There is no maximum width for footways; widths should take account of pedestrian volumes and composition.

3.11 As with walking, MfS and MfS2 advise that cycling can bring about benefits in terms of vehicular emissions, traffic collisions and public health. To summarise, the documents advise that:

- Cyclists should be accommodated on the carriageway.
- Cyclists prefer direct, barrier-free routes that avoid the need to dismount. Routes that take cyclists away from their desire lines and require them to concede priority to side-road traffic are less likely to be used.

- Off-carriageway cycle tracks that bring cyclists into conflict with side road traffic can be more hazardous than routes that stay on the main carriageway.
- Cyclists are sensitive to traffic conditions; high speeds or high volumes of traffic tend to discourage cycling. If traffic conditions are inappropriate for on-street cycling, they should be addressed to make on-street cycling satisfactory.
- Junctions should be designed to accommodate cyclist's needs. Over-generous corner radii that lead to high traffic speed should be avoided.

3.12 At a regional level transport related policy is set out in CBC's '3rd Local Transport Plan 04/2011 to 03/2026' (LTP3) and the Arlesey & Stotfold Local Area Transport Plan. The overarching transport objectives that are pursued within the plans are:

- To assist the sustainable economic growth of the region, through improvements to the transport network
- To create an integrated transport system that is safe, sustainable and accessible
- To implement initiatives that bring improvements in the areas of safety, quality and convenience
- To increase public transport usage by improving; the quality of vehicles and infrastructure; the reliability, frequency and journey time of services; and bus/rail integration
- To improve access to key services by widening travel choices, especially for those without access to a car
- To make travel for all modes safer and, in particular, reduce the number and severity of road casualties
- To remove unnecessary HGVs from affected communities through; appropriate traffic management measures, highway improvements and encouraging the use of alternative modes of transport.
- To maintain the transport system to standards which allow safe and efficient movement of people and goods
- To protect and enhance the built and natural environment of the county by reducing the adverse impacts of traffic.
- To improve the quality of public spaces for residents, workers and visitors by creating a safe, attractive and accessible environment.
- To enhance air quality, particularly within declared Air Quality Management Areas.

3.13 At a local level the vision for Arlesey is set out in the Central Bedfordshire Site AllocationsDevelopment Plan Document (April 2011).

4.0 Impact Assessment

4.1 The DfT Guidance on Transport Assessment (2007) outlines the issues which a TA should address in terms of any possible transport and related environmental impacts.

4.2 The Guidance outlines that a TA should address the following issues:

- **Reducing the need to travel, especially by car –** ensure at the outset that thought is given to reducing the need to travel; consider the types of uses (or mix of uses) and the scale of development in order to promote multipurpose or linked trips.

- **Sustainable accessibility –** promote accessibility by all modes of travel in particular public transport, cycling and walking; assess the likely travel behaviour or travel pattern to and from the proposed site; and develop appropriate measures to influence travel behaviour.

- **Dealing with residual trips –** provide accurate quantitative and qualitative analysis of the predicted impacts of residual trips from the proposed development and ensure that suitable measures are proposed to manage these impacts.

- **Mitigation Measures –** ensure as much as possible that the proposed mitigation measures avoid unnecessary physical improvements to highways and promote innovative and sustainable transport solutions.

4.3 These issues are considered in detail in this section of the report.

Sustainable Accessibility

4.4 A summary of the sustainable options available for residents and visitors to the site is provided below. A Travel Plan (TP)will be prepared in support of future Planning Applications on the site. The TP will provide a detailed assessment of the existing sustainable alternatives to the private car that are prevalent to the site and will propose additional measures to assist in achieving the modal shift target of the plan.

4.5 As part of the TP, a Travel Plan Coordinator (TPC) will be appointed to oversee the management and monitoring of the Plan to ensure that all available options are capitalised upon to ensure that the site is as sustainable as possible.

Sustainability – Walking

4.6 Walking is widely considered to be the most important mode of travel at a local level. It can be appreciated that the facilities within Arleseyare all located within the widely recommended 2km walking distance of the site.

4.7 Well-maintained, illuminated footpaths on High Street will link both parcels of the development to the rest of Arlesey. The relief road and proposed traffic-calming measures on High Street which form part of the development will make it a more attractive and safer route for pedestrians.

4.8 Walking forms an often forgotten part of journeys made predominantly by other modes. There are several bus stops for both directions of travel on High Street and Stotfold Road.

4.9 Arlesey railway station is located in the north of the town. It is situated on the East Coast Mainline, which runs regular services between London, Leeds, Newcastle and Edinburgh.

4.10 Passive surveillance of the routes from the site to the town centre is provided by virtue of the fact that the routes are overlooked by residential dwellings and that cars, cyclists and pedestrians follow the same routes. This is in line with the recommendations detailed in ‘Safer Places: The Planning System and Crime Prevention’ (2004) and MfS (2007).

4.11 The pedestrian routes within the site will follow logical routes thereby providing convenient sustainable access around the site, and linking in with the existing provision adjacent to the site.

Existing Pedestrian Behaviour

4.12 According to 2011 UK Census Data, 4.48% of Arlesey residents travel to work on foot. This figure falls below the national average of 11.34%.

4.13 Census data from 2001 (the most recent Census from which figures are available) shows that 10.56% of Arlesey residents live within 2km of their place of work. There is therefore potential to more than double the number of residents who walk to work. It is envisaged that the promotion of walking through the TP and the provision of employment opportunities on the site will encourage a greater proportion of residents of the siteto walk than is currently the case within the town.

Access for the Disabled

4.14 The existing route between the proposed residential dwellings, the proposed local centre and the existing areas of Arlesey will be designed to facilitate journeys by mobility scooters.

Sustainability – Cycling

4.15 It is widely recognised that cycling has the potential to substitute for short car trips, particularly those less than5km.The site lies well within 5km of the entire built up settlement of Arlesey, with Letchworth also located within 5km of the site. There therefore exists great potential for residents and visitors to the site to use a bicycle as their main mode of travel.

4.16 As is the case with walking, cycling is also well suited to form part of longer journeys by public transport. Given the proximity of the site to Arlesey Railway Station, where cycle standsand lockers are provided, the site's location is considered to be ideal in terms of facilitating multi-modal sustainable journeys within the region and to London.

4.17 A footpath/cycleway will run north-south through the centre of the Eastern parcel, from the existing SUSTRANS cycle route on Stotfold Road to High Street, where it will loop around the back of Gothic Mede School.

4.18 A secure and easily accessible cycle parking facility will be provided with each dwelling and cycle parking will also be provided within the local centre and areas of employment.

Existing Cycling Behaviour

4.19 Data from the 2011 Census shows that 1.55% of commuters living in Arlesey commute by bicycle. This is less than the national average of 3.04%.

4.20 Given that 15.86% of Arlesey commuters live within 5km of their workplace (as shown in the 2001 Census), there exists a huge potential for a high uptake of cycling amongst residents of the development to act as a catalyst to increase the number of residents of Arlesey who commute by bicycle, especially as this will be promoted by the TPC as part of the TP.

Services and Facilities Accessible on Foot/by Bicycle

4.21 In addition to the proposed onsite facilities, the following services and facilities are conveniently and safely accessible by foot and bicycle from the site:

- Schools:
  - Gothic Mede Lower School – located adjacent to the western parcel
  - Etonbury Academy – A Middle School located north of the eastern parcel

In addition to those mentioned above, there are a number of other schools within 5km of the site. Please note that within the Bedfordshire area, there are some schools which use the rarely-used, lower, middle, upper system.

- Day-today facilities

  In addition to nearby schools, there is a Medical Centre, resource centre and library on High Street, a Post Office on Stotfold Road and various Convenience Stores and other facilities within the town.

Sustainability – Public Transport

4.22 As alluded to above, the site is well located in terms of accessibility within Arlesey and the wider region by public transport.

Bus Services

4.23 Bus stops are located along the length of High Street, Church Lane and Stotfold Road. Arlesey is served by several bus routes connecting it to the wider region.

4.24 A summary of the bus services is provided below:

Route Number	Operator	Route	Frequency (Monday-Saturday)
72	Stagecoach	Bedford-Hitchin	Hourly
90 Link	J & D Travel	Chicksands/Shefford-Stotfold	Hourly
E7	J & D Travel	Sandy/Biggleswade-Letchworth/Baldock	Hourly
W7	Wanderbus	Shefford-Letchworth	Hourly (Thursday only)

4.25 From the above it can be appreciated that regular bus services operate between Arlesey and the surrounding towns.

Existing Bus Patronage

4.26 2011UK Census data shows that 1.78% of residents of Arlesey commute by bus. This is lower than the national average of 7.77% however, given the promotion of bus travel within the TP, it is envisaged that a greater proportion of residents of the new development will make use of bus services than is currently the case for residents of Arlesey.

Train Services

4.27 Arlesey Railway Station is situated on the East Coast Mainline, which runs regular services between London, Leeds, Newcastle and Edinburgh (though not all destinations can be reached directly from Arlesey). Arlesey Station is served by First Capital Connect.

4.28 The week-day average frequency and journey times for direct trains between Arlesey and the key destinations are given below:

Destination	Frequency	Journey Time
London (Kings Cross)	2 Per Hour	37-41 minutes
Peterborough	2 Per Hour	40-45 minutes
Stevenage	2 Per Hour	11-12 minutes

4.29 From the above it can be seen that regular services, offering connections to many destinations further afield, serve Arlesey. Regular journeys to and from London make Arlesey a viable place from which to commute to London.

4.30 Secure cycle storage facilities are provided at the station thereby facilitating multi-modal sustainable travel.

Existing Train Patronage

4.31 2011 UK Census data indicates that 9.05% of Arlesey residents commute by train; this is above the national figure of 5.46%, reflecting Arlesey's position as a commuter town.

Highway Safety

4.32 Within the context of this ITA, safety is concerned with reducing the loss of life, injuries and damage to property resulting from transport related incidents and crime on critical locations on the road network.

4.33 MfS advises that safety by way of natural surveillance is best achieved if cars, cyclists and pedestrians are kept together if the route is over any significant distance and that there should be a presumption against routes serving only pedestrians and/or cyclists. Footpaths and cycle ways within the development will follow this guidance.

4.34 The increased safety associated with over-looked streets is also alluded to in the Government's National Guidance 'Encouraging Walking: Advice for Local Authorities' (March 2000) which concludes that walking is good for the community as streets are safer with people in them. To ensure that the site itself can be considered to be as safe as possible, footpaths within the development will be provided alongside the carriageway or overlooked by residential properties. Where formal pedestrian crossing facilities are required they will be positioned along the key desire lines in order to minimise the number of pedestrians seeking to cross the carriageway at other locations.

4.35 In accordance with the guidelines set out in the DfT's 'Guidance on Transport Assessment' a review of the accidents to have occurred within the scope of the study during the past five years has been undertaken.

4.36 CBC have provided highway accident statistics for the period 01/1/2008 – 31/3/2013. A summary of the accidents to have occurred within approximately 50m of the junctions assessedwithin this ITA is presented below:

Hitchin Road/Arlesey Road Roundabout(South of Henlow)

4.37 There have been two serious accidents and six slight accidents within 50m of the roundabout in the period under consideration.

4.38 One serious accident involved a car and a motorcyclist, and was as a result of the car pulling out to overtake a motorcyclist, then pulling in sharply, causing the motorcyclist to brake heavily and skid.

4.39 The other serious accident involved two cars, and was caused by a driver following too closely to the car in front and failing to slow down in time for the roundabout, resulting in a collision with the car in front.

4.40 The contributory factors of the six slight accidents are shown below:

Travelling too fast for conditions, failed to look properly.
Failed to look properly.
Failed to look properly, failed to judge other person's path or speed.
Failed to look properly, Not displaying lights at night or in poor visibility, vehicle blind spot.
Careless, reckless or in a hurry.
Slippery road (due to weather), disobeyed automatic traffic signal.

Arlesey Road/Stotfold Road Roundabout

4.41 There has been one serious accident and three slight accidents within 50m of the Stotfold Road/Arlesey Road roundabout in the period being considered.

4.42 The serious accident involved a motorbike and two cars, and occurred when the motorcyclist swerved on a patch of ice, and the motorist behind them swerved to avoid them, colliding with a car travelling in the opposite direction.

4.43 Of the three slight accidents, two are listed as having no contributory factors, and one was attributable to aggressive driving, failure to look properly, exceeding the speed limit and driving carelessly, recklessly or being in a hurry.

A507/Hitchin Road Roundabout (South of Stotfold)

4.44 There were three accidents in the vicinity of the junction during the period being considered. One was serious in nature and two were slight.

4.45 The serious accident involved two cars, and occured as a result of one driver failing to look properly, and pulling out onto the roundabout into the path of the other car.

4.46 Of the two slight accidents, one was as a result of a driver failing to look properly, and one was as a result of a slippery road due to adverse weather conditions.

Hitchin Road/Eliot Way Roundabout

4.47 There have been no serious accidents and one slight accident at the Hitchin Road/Eliot Way Roundabout.

4.48 The slight accident was attributable to failure of a driver to look properly.

A1(M)/A507 Grade-separated Roundabout

4.49 There has been one serious accident and eight slight accidents at the A1(M)/Arlesey Road grade-separated junction in the five year period being considered.

4.50 The serious accident involved one car, which skidded in snow and hit a tree whilst exiting the slip road. It was attributable to a slippery road surface, and defective or under-inflated tyres.

4.51 The contributory factors of the eight slight accidents are shown below:

Stationary or parked vehicles(s).
Poor turn or manoeuvre, failed to signal or misleading signal, failed to look properly, sudden breaking, careless, reckless or in a hurry.
Exceeding speed limit, swerved, loss of control, defective brakes, careless, reckless or in a hurry.
Sudden braking, failed to look properly.
Poor turn or manoeuvre, failed to judge other person's path or speed, failed to look properly, following too close, sudden braking.
Failed to look properly.
Poor turn or manoeuvre, careless, reckless or in a hurry, junction restart (moving off at a junction).
No contributory factors.

Proposed Site Accesses

Central and Western Accesses - High Street/Hitchin Road

4.52 One serious accident and nine slight accidents have been recorded on the 1.6km section of High Street/Hitchin Road that will be the location of the site access as well as traffic-calming measures as part of the development.

4.53 The serious accident involved a car and a cyclist, and was attributable to the cyclist entering the road from the pavement and poor visibility due to vegetation. The cyclist was travelling along the pavement, the car edged out of their drive and the cyclist failed to stop, hitting the car's bonnet.

4.54 The contributory factors of the nine slight accidents are shown below:

Slippery road (due to weather), road layout (eg. bend, hill, narrow carriageway), travelling too fast for conditions, poor turn or manoeuvre.
Loss of control, nervous, uncertain or panic.
Sudden braking.
Slippery road (due to weather), stationary or parked vehicle(s).
Exceeding speed limit, stationary or parked vehicle(s), vehicle blind spot, dazzling sun, pedestrian crossing road masked by stationary or parked vehicle, pedestrian failed to judge vehicle's path or speed.
Failed to look properly, careless, reckless or in a hurry, dazzling sun, distraction in vehicle.
Failed to look properly, failed to judge other person's path or speed, failed to signal or misleading signal, exceeding speed limit.
No contributing factors.
Vehicle in course of crime, impaired by alcohol.

Eastern Access – A507

4.55 There have been no serious accidents and one slight accident in the area of the proposed A507 access junction.

4.56 The slight accident was attributable to driving carelessly, recklessly or in a hurry, and failure to look properly.

Stotfold Road Access

4.57 There has been one serious accident and two slight accidents in proximity to the proposed access on Stotfold Road.

4.58 The serious accident involved a motorbike and two cars, and was covered in the Stotfold Road/Arlesey Road roundabout section of this report.

4.59 One of the slight accidents was attributable to failure to look properly and dazzling by the sun, and the other was attributable to impairment by alcohol and driving carelessly, recklessly or in a hurry.

Accident Summary

4.60 From the above summary of accidents to haveoccurred in the vicinity of the junctions within the scope of this ITA, it can be appreciated that the vast majority of accidents have been slight in nature and have been attributable to careless driving, poor weather conditions or drivers being impaired by alcohol. None of the accidents to occur have been attributable to junction geometry.

Traffic Impact

4.61 Following scoping discussions with CBC Highway Authority it was agreed that the impact of the proposed development on the following junctions and links would be assessed during the traditional AM (08:00-09:00) and PM (17:00-18:00) peak hours:

- A507 Arlesey Road/Hitchin Road (roundabout south of Henlow)
- A507 Arlesey Road/Stotfold Road (roundabout)
- A507/Hitchin Road (roundabout south of Stotfold)
- Hitchin Road/Eliot Way (roundabout)
- A507/A1(M) (grade-separated roundabout)
- Arlesey Road/Hitchin Road/Arlesey New Road (priority junction)

4.62 In addition to the above impact assessments requested by CBC, the HAhave been contacted. The HA confirmed the request to assess the A507/A1(M) junction and also requested that an assessment of the A1/B658 roundabout is undertaken.

4.63 Following feedback from local residents and stakeholder groups during the consultation period the assessment has been extended to include the section of Hitchin Road to the south of '5-ways' junction.

4.64 A robust approach has been taken at every opportunity during the assessment. The traffic flows modelledin this interim assessment can therefore be considered to be an over-estimate; this allows the resulting conclusions to be made with a great deal of confidence.

4.65 The trip generation of the residential element of the site is based upon 1,400dwellings, which is higher than the number of dwellings that are anticipated.

4.66 Network growth has been added to the traffic count data; there will therefore inevitably be a degree of double counting given that the proposals form a large percentage of the growth that is proposed within the area in the near future. Furthermore, network growth to 2025 has been applied. It should be noted that the DfT Guidance on Transport Assessment advises that growth should be applied for a period no less than five years after the registration of a planning application or ten years for the strategic road network.

4.67 No allowance has been made within this ITA for the reduction in trip generation which will come about as a result of the measures identified within the TP. The target of the TP is to

bring about a reduction in single occupancy car use. The findings of this ITA can therefore be considered to be a conservative estimate.

4.68 No account has been taken of the anticipated reduction in trips that will result from the facilities proposed on the eastern parcel. The supermarket and local centre, by definition, will provide facilities for residents of the site as well as the existing residents of Arlesey. These facilities are therefore unlikely to generate the number of vehicular trips onto the highway network which have been accounted for within this ITA, as the majority of patrons will be able to travel on foot or by bicycle. Furthermore, the vehicles which do access these facilities are likely to be vehicles already travelling adjacent to the site, i.e. pass-by trips; there will therefore inevitably be further double counting.

4.69 To assist in assessing the potential impact of the development, independent 12-hour classified traffic counts were conducted by Streetwise Services Ltd on Thursday 20th June 2013. This date was agreed with the highway authority,and was outside of the school holidays in the locality. The traffic surveys confirm that the traditional peak hours assessed within this report coincide with the actual peak times at each of the junction locations.

4.70 In order to gauge the potential impact of the proposed development each of the junctions/roundabouts has been modelled with and without the anticipated development related traffic, this is known as the Do Something and the Do Nothing scenario.

4.71 The Do Nothing 2013 scenario models the junctions using the data taken directly from the classified traffic counts described above.

4.72 The figures used in the Do Nothing 2025 scenario use data taken from the classified traffic counts with NTM adjusted TEMPRO (6.2) growth to 2025 applied and the expected trip generations of other consented developments (and developments which are allocated and will therefore potentially be consented in the foreseeable future) in the area accounted for. The consented developments included within the assessment are listed below:

- Land at Arlesey Road, Stotfold – 85 dwellings (Policy HA12)
- Land at Roker Park, The Green, Stotfold – 43 dwellings (Policy HA13)
- Land at Roecroft School Site, Stotfold – 40 dwellings (Policy HA14)
- Land at former Pig Development Unit, Hitchin Road, Stotfold – 5ha of employment land, assumed for the purpose of this assessment as being 0.75ha each of B1, B2 and B8 employment land (Policy MA7)

4.73 The Do Something 2025 scenario is made up of the classified count data with NTM adjusted TEMPRO (6.2) growth rates to 2025 applied, with the addition of the predicted development generated traffic of the aforementionedconsented developments as well as the anticipated trip generation of the Arlesey Cross site.

4.74 The application of TEMPRO network growth to the traffic count data is considered to be a highly robust approach given that the Arlesey Crossdevelopment itself constitutes a significant proportion of the growth predicted in the town.

4.75 The anticipated traffic generation of the site has been calculated using trip rates extracted from the TRICS database. The trip rates are based upon average traffic surveys conducted at similar sites throughout England (excluding Greater London, the Isle of Man and the Isle of Wight).

4.76 The quantum of development on the site which has been accounted for is listed below; the TRICS categories used are shown in brackets. It should be noted that in order to ensure that the assessment can be considered to be robust the scale of development within each land use category has been rounded up. Following discussions with CBC highway authorityit has been agreed that as the onsite primary school is largely intended to serve the development and existing residents of Arlesey it will therefore not adversely impact upon the wider road network; as such the potential trip generation of this facility has not been included within the assessment.

- 1,400 Residential Dwellings (Mixed Private/Non-Private Housing)
- 500m² Retail Units (Local Shops)
- 1,000m² Supermarket (Food Superstore)
- 300m² D2 Health Care (GP Surgery)
- 1,700m² B1 Office (Offices)
- 2,4000m² Industrial Estate (Industrial Estate)
- 300m² Community Centre (Community Centre)
- 100 Bed Care Home (Care Home)
- 50 bed Sheltered Accommodation (Sheltered Accommodation)

4.77 For the purposes of this model, of the 1,400 residential units, 500 will be situated on the western site, and 900 on the eastern site, along with all non-residential development.

Traffic Distribution

4.78 The distribution of the trip generation of the site has been determined using a gravity model which has been prepared based upon the 2001UK Census data for the Arlesey ward (data on commuting distance from the more recent 2011 census is not currently available).

4.79 The 'Distance Travelled to Work' category of the Census Data has been used to determine the percentage of people who travel the following distances to work: less than 5km; between 5km and 20km; between 20km and 40km and greater than 40km.

4.80 The total trip generation of the site was apportioned to the three zones described above based upon the proportions that travel these distances in the Census Data; these proportions are shown below:

- Less than 5km – 26.2%
- Between 5km and 20km – 48.0%
- Between 20km and 40km – 14.5%
- Greater than 40km – 11.3%

4.81 Radii of these distances from the site were then drawn on a map. The major towns/cities within each zone were identified and the traffic allocated to each zone was then apportioned to each town/city within the zone on a pro rata basis, based upon the population of the settlement.

4.82 The route to each town/city was determined using Google Maps, and the route through the junctions that were analysed for this ITA was noted.

4.83 The main roads through the eastern and western parcel of the development are intended to act as a relief road for the High Street. The trip distribution has therefore assumed that 80% of the current traffic on High Street will instead use the Relief Road.

4.84 In both the Do Nothing and the Do Something scenarios the HGV% modelled at each of the existing junctions on the network are those taken directly from the classified countdata. This will inevitably lead to an over estimate in the Do Something scenario, as given the largely residential nature of the development, the HGV% of the site generated traffic is likely to be lower than that currently on the network.

4.85 Capacity assessments have been undertaken at all of the junctions listed in Paragraph 4.61 using the industry standard computer modelling software, 'Junctions 8'.

4.86 What follows is an analysis of the result of the modelling at each of the junctions:

Site Access

4.87 The development proposal includes fourpotential site accesses.Preliminary designs for these access junctions have been subject to capacity assessments.

4.88 As previously mentioned within this report there will be two principle points of access to the western land, with a spine road being provided through the site between the two points of access to provide relief to High Street.

4.89 The northernmost point of access to the western land will be the central access described below. An additional access will be provided to the south of High Street off a reconfigured five-ways junction. The main spine road through the western land will therefore serve as a relief road, thereby helping to minimise vehicular movements along High Street.

4.90 This junction has already been designed by others and approved by CBC Highway Authority.

Central Access

4.91 The central access will be situated between the two parcels on High Street, and will serve both parcels. It will take the form of two mini roundabouts set in a shared-surface environment.

Eastern Access

4.92 The eastern access will serve the eastern parcel from the A507 in the form of a roundabout.

4.93 The main road through the eastern development connecting High Street to the A507 will act as a relief road for High Street, Church Lane and Stotfold Road.

4.94 The access junctions were analysed in the AM (07:45-09:15) and PM (16:45-18:15) peak periods to 2025, with the addition of the development traffic.

4.95 This analysis showed that the proposed access junctions will operate within capacity to the growth year 2025 with the full development occupied.

Summary of Junction Assessments

4.96 Additionally some junctions that are at or below capacity in the Do Nothing 2025 scenario will potentially be above capacity at peak times in the Do Something 2025 scenario.

4.97 Initial modelling has demonstrated that some of the junctions will be operating above their capacity as a result of the development traffic and network growth. Geometric highway improvement works may therefore be required in order to mitigate the impacts of the development by promoting a nil-detriment solution.

4.98 The modelling has also demonstrated that some junctions will operate above their capacity in the Do Nothing 2025 scenario; that is to say they will be above capacity even without the traffic resulting from this development.

4.99 It should be noted that at such time as the exact nature of the development is known a full TA will be prepared in support of a planning application for the Arlesey Cross development;at this time a more detailed analysis of the junctions will be undertaken.

4.100 The detailed analysis will make allowance for the measures which will be promoted within the TP which will be submitted in support of the application, and will also take into account the internal movements to the local centre, community and employment facilities provided on the site.

4.101 Upon completion of the detailed assessment described above, physical highway mitigation measures designed to bring about a nil detriment solution will be proposed and agreed with the Highway Authority at junctions at which the cumulative impact of the development is considered to be severe in the context of the NPPF.

4.102 The cost of the works will be quantified by a contractor (approved by CBC highway authority) and set out in the site's Section 106 Agreement.

Assessment of Hitchin Road South of '5-ways' junction

4.103 The standard methodology used to assess determine the capacity of a road link is presented in the Design Manual for Roads and Bridges (DMRB): Volume 5, Section 1, Chapter 3, Part 3 TA 79/99.

4.104 Based upon the above methodology an initial assessment of Hitchin Road to the south of '5-ways' junction has been undertaken.

4.105 The assessment demonstrated that upon full occupation of the proposed development the link will continue to operate within its capacity.

5.0 Summary and Conclusions

5.1 This ITA has been prepared by Woods Hardwick Infrastructure LLP, on behalf of Central Bedfordshire Council (CBC) Property Assets, in relation to a site known as Arlesey Cross, Arlesey, Bedfordshire.

5.2 The proposal is for a mixed use development at a site known as Land at Chase Farm and Land West and North-East of High Street, Arlesey, Bedfordshire, comprising in the region of 1,250 residential dwellings; areas of employment; a First School; community buildings; a supermarket and retail units; and areas of public open space.

5.3 The development will be across two parcels on either side of High Street, known as the western and eastern parcels.

5.4 As set out within this ITA, the site is considered to lie in a sustainable location and clearly conforms to policy, guidance and objectives at a national, regional and local level. The site is included in the Central Bedfordshire (North) Site Allocations Development Plan Document (April 2011).

5.5 Four junctions allowing access to the site are proposed:

- A double mini roundabout on High Street, providing access to and between the two parcels ('Central Access')
- An access to the south of the western parcel from which a spine road through the western parcel will connect to the central access ('Western Access')
- A roundabout on the A507, allowing access to the eastern parcel ('Eastern Access')
- A priority junction for the eastern parcel on Stotfold Road ('Stotfold Road Access')

5.6 The development will include a relief road, which is indented to reduce the level of traffic on High Street. It will connect the Western Access to the Central Access, where it will cross High Street and continue to meet the A507 at the Eastern Access.

5.7 The accesses will be designed in accordance with Design Manual for Roads and Bridges TD40/94 and Manual for Streets and their formats have been agreed in principle with the highway authority.

5.8 As agreed in pre-application scoping discussions with the local Highway Authority, CBC, and the HA, the potential impact of the proposed development on the local highway network has been examined in detail with particular reference to the following locations:

- A507 Arlesey Road/Hitchin Road (roundabout south of Henlow)
- A507 Arlesey Road/Stotfold Road (roundabout)
- A507/Hitchin Road (roundabout south of Stotfold)
- Hitchin Road/Eliot Way (roundabout)
- A507/A1(M) (grade-separated roundabout)
- A1(M)/B658 (roundabout)
- Arlesey Road/Hitchin Road/Arlesey New Road (priority junction)

5.9 An assessment of Hitchin Road to the south of '5-ways' junction has also been undertaken.

5.10 An extremely robust approach has been undertaken during the modelling of the above junctionsand link, which have been assessed with network growth to 2025 and other locally consented schemes accounted for.

5.11 The modelling has demonstrated that some junctions will operate above their capacity in the Do Nothing 2025 scenario; that is to say they will be above capacity even without the traffic resulting from this development.

5.12 Additionally some junctions that are at or below capacity in the Do Nothing 2025 scenario will potentially be above capacity at peak times in the Do Something 2025 scenario.

5.13 Highway improvement works may therefore be required at some of these junctions.

5.14 Upon completion of a detailed TA, geometric highway improvement works designed to bring about a nil detriment solution will be proposed and agreed with the highway authority at junctions at which the cumulative impact of the development is considered to be severe.

5.15 The cost of the works will be quantified by a CBC highway authority approved contractor and detailed in the site's Section 106 Agreement.

5.16 The assessment has also demonstrated the Hitchin Road to the south of '5-ways' junction will continue to operate within capacity upon full occupation of the proposed development.

5.17 As described throughout the report, the site lies in a highly sustainable location in terms of safe and convenient provision for pedestrians and cyclists, the site is also ideally located in terms of accessibility to Arlesey Railway Station.

5.18 The services and facilities within the town centre, as well as those that will form part of the development, will be accessible on foot and by bicycle,which will reduce the vehicular trip generation of the development.

5.19 **There is therefore no reason in transportation or highway terms why the nature and scale of the development proposed on the Arlesey Crosssite should not be fully supported through the planning process.**