Proposed Residential Development
Land off Radwinter Road
Saffron Walden
Essex

Transport Assessment

Cedar Barn, White Lodge,
Walgrave,
Northampton,
NN6 9PY

T: 01604 781811
F: 01604 781999
E: mail@jppuk.net
W: jppuk.net

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Report Originators

Prepared by

Martin Andrews MEng (Hons)
Project Engineer
martin.andrews@jppuk.net

Reviewed by

Philip A Brown BEng (Hons) CEng MICE MCIHT MCIWEM CWEM
Director
phil.brown@jppuk.net

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1.0 Introduction

1.1 Background

1.1.1 This report has been prepared by JPP Consulting Limited on behalf of Manor Oak Homes to support an outline planning application for mixed development comprising up to 260 dwellings, a retirement village comprising 42 beds and up to 1800m^2 gross floor area of B1 Office. The benefit of this report is limited to our instructing Client.

1.1.2 The proposed mixed development is located to the east of Saffron Walden at land off Radwinter Road as shown on the location plan below in Figure 1 and enclosed in Appendix A. The proposed development is bound by Radwinter Road to the north, agricultural land to the east and south and commercial development to the west.

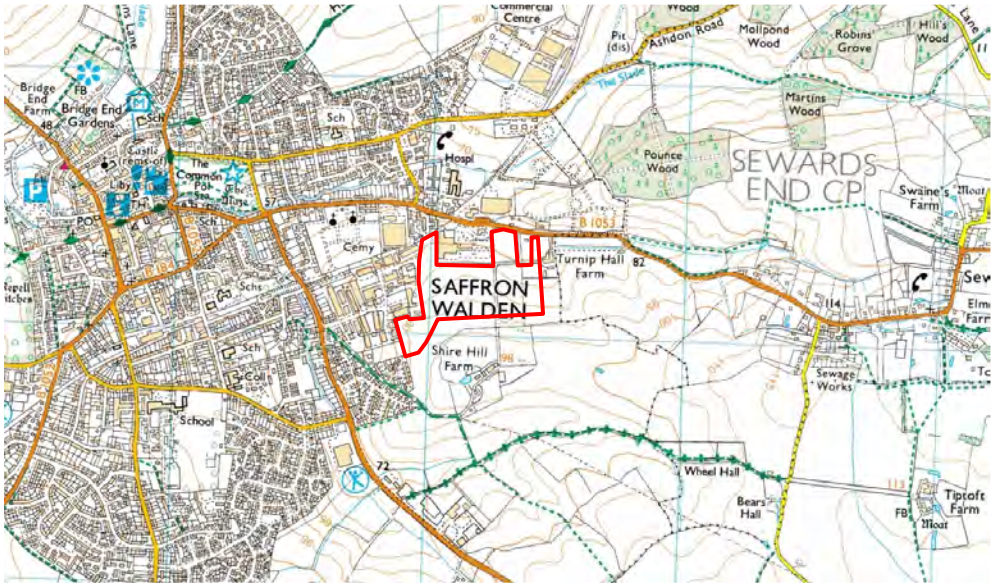

Figure 1: Site Location Plan

1.2 Scope of Assessment

1.2.1 The aim of the Transport Assessment is to support an outline planning application for a mixed development comprising up to 260 dwellings, a retirement village comprising 42 beds and up to 1800m^2 gross floor area of B1 Office. The proposed development layout is shown on the drawing enclosed in Appendix B.

1.2.2 This report will consider the wider highway network implications of the new development and will also focus on the sustainable credentials of the development.

1.2.3 This report is accompanied by a Framework Residential Travel Plan, JPP reference R-RTP-R6694PP-01 and Framework Workplace Travel Plan JPP reference R-RTP-R6694PP-01. The Travel Plans and Transport Assessment should be read as sister documents.

1.3 Consultation

1.3.1 A meeting was held with Essex County Council to discuss the scoping of the Transport Assessment on 18th October 2013. No formal consultation documentation was sent to or received from Essex County Council.

1.3.2 A pre-application meeting was held with Uttlesford District Council on the 3rd December 2013. Essex County Council we in attendance at this meeting and highway matters were discussed in the broad context of the proposed development.

1.4 Structure of Report

1.4.1 Following this introductory chapter the report is structured as follows:

- Section 2 describes the site and development proposal;
- Section 3 reviews relevant national and local transport policies;
- Section 4 describes the characteristics of the existing transport network surrounding the development site;
- Section 5 assesses the accessibility of the site to education, health, employment, retail and leisure facilities;
- Section 6 sets out the person trips and mode assignment from the proposed development;
- Section 7 assesses the impact of the proposed development on more sustainable forms of transport;
- Section 8 assesses the impact of the proposed development on vehicular highway network; and
- Section 9 is the conclusions.

2.0 Site Description and Development Proposals

2.1 Site Location

2.1.1 The proposed residential development is located to the east of Saffron Walden at land off Radwinter Road as shown on the location plan in Figure 1 and enclosed in Appendix A. The proposed development is bound by Radwinter Road to the north, agricultural land to the east and south and commercial development to the west.

2.2 Development Description

2.2.1 The proposed development will comprise a mixed development comprising up to 260 dwellings, a retirement village comprising 42 beds and up to 1,800m^2 gross floor area of B1 Offices with associated highway infrastructure and public open space. The proposed development layout is shown on the plan enclosed in Appendix B.

2.3 Vehicular Access

2.3.1 The proposed development will be provided with two vehicular accesses. The primary access will be off Radwinter Road in a similar position to the existing farm access. This access will provide the development with an all movements ghost island junction which will allow residents to access the existing highway infrastructure. This access within the context of the proposed development is shown on the plan enclosed in Appendix B with a detailed design of the access enclosed in Appendix E. A Stage 1 Road Safety Audit has been completed for the Radwinter Road access. We have also completed a Designer's response although there are no significant comments which cannot be addressed at detailed design stage. A copy of the Stage 1 Road Safety Audit and Designer's response is enclosed in Appendix F.

2.3.2 A second vehicular access for the development will be provided on the western boundary. This access will connect with Shire Hill which serves the neighbouring commercial development. To the west Shire Hill connects with Thaxted Road. This access within the context of the proposed development is shown on the plan enclosed in Appendix B with a detailed design of the access enclosed in Appendix G.

2.4 Pedestrian and Cycle Access

2.4.1 The above mentioned vehicular accesses will be provided as all movement accesses and will accommodate pedestrians on dedicated footways. The Shire Hill access will accommodate cyclists on a 3m wide shared cycleway / footway.

2.4.2 A dedicated 3m wide shared cycleway / footway will be provided for users wishing to access Radwinter Road. This access will be located between the proposed care home and the existing supermarket. This dedicated link will reduce travel time and distances to Radwinter Road and will further encourage the use of more sustainable forms of transport.

2.5 Parking

2.5.1 Car and cycle parking for the development will be provided in line with Essex County Council's document 'Parking Standards Design and Good Practice' dated September 2009 which has been adopted by Uttlesford District Council.

2.6 Planning Background

2.6.1 The proposed development site is currently agricultural land we are not aware of any previous development on the site other than associated with its agricultural use.

2.6.2 The access to the farm was moved to the east relatively recently when the adjacent supermarket was constructed. We are not aware of any previous planning applications which have been approved or refused for the proposed development site.

2.6.3 The proposed development site forms part of a larger development referred to as 'Saffron Walden 1 Policy 1' within the draft local plan. This larger development is for a mixed use development comprising some 800 dwellings, 6 hectares of employment land with associated facilities including primary school, local centre and public open space. As part of this larger development it is intended that a link road can be provided between Radwinter Road and Thaxted Road.

2.6.4 A planning application (ref UTT/13/2060/OP) which forms part of the above 'Saffron Walden 1 Policy 1' allocation is currently being determined by the planning authority. This application is for up to 300 dwellings to be located off Thaxted Road. This application will not prevent the long term aim of a link road being provided between Radwinter Road and Thaxted Road.

2.7 Radwinter Road to Thaxted Road Link Road

2.7.1 As described above it is the intention of the planning authority that the land allocated as 'Saffron Walden 1 Policy 1' within the draft local plan provides a link road between Radwinter Road and Thaxted Road (RT Link).

2.7.2 This proposed development to be accessed off Radwinter Road will provide a link road to the development boundary, however, this link road cannot be completed as a parcel of land between this and the Thaxted Road development is not available for development.

2.7.3 This planning application does not preclude an option for a RT Link road in the future, however, this link road cannot be fully constructed as a result of this planning application.

2.8 Proposed Road Hierarchy

2.8.1 The submitted planning application is for outline planning permission with layout to be determined. However, it is proposed that the internal road hierarchy will be designed around the following principles:

- Radwinter Rd to Thaxted Road Link – 6.75m wide carriageway + 2 x 2m wide verge + 2m wide footway + 3m wide cycleway
- Radwinter Rd to Thaxted Road Link beyond footway – 6.75m wide carriageway + 2 x 2m wide footway
- Shire Hill Link – 6.75m wide carriageway + 2m wide footway + 3m wide cycleway
- Dwelling Access Roads – Either 5.8m shared surface or 4.8m wide carriageway + 2 x 2m wide footway

3.0 Policy Review

3.1 Introduction

3.1.1 The following section of the report provides an examination of current polices relating to transport at national and local level as they relate to the proposed development.

3.2 National Policy

3.2.1 Creating Growth, Cutting Carbon: Making Sustainable Local Transport Happen, The Transport White Paper was published in January 2011 by the Coalition Government. The Document outlines a vision 'for a transport system that is an engine for economic growth, but one that is also greener and safer and improves quality of life in our communities.' Consequently, reducing carbon emissions derived from transport together with generating economic growth and contributing to economic vitality. The Localism Agenda is another strong theme with the White Paper supporting local solutions that are tailored to specific needs and behaviour patterns to deliver effective local transport.

3.2.2 The priority for local transport, as outlined is to "encourage sustainable local travel and economic growth by making public transport and cycling and walking more attractive and effective, promoting lower carbon transport and tackling local road congestion.

3.2.3 The White Paper Chapter 4 is titled Enabling Sustainable Transport Choices. The chapter states that 'the Government wants to encourage and enable more sustainable transport choices'. The document goes on to explain the "nudge" concept that taps into human behavioural tendencies to encourage "good" choices. Nudge interventions are described as being easy and not forbidding choice and travel planning is listed as an example of such.

3.3 National Planning Policy Framework

3.3.1 In March 2012, the National Policy Framework (NPPF) was published by the coalition government with its overarching principle being a *'presumption in favour of sustainable development.'* The policies contained within the NPPF applied with immediate effect and thereby replaced, amongst other PPS's and PPG's, PPG 13 'Transport'. Section 4 of the NPPF 'Promoting sustainable transport' covers the transport policy, detailed below are the policies that are of relevance.

3.3.2 In paragraph 29, the NPPF acknowledges that *'transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives' and goes on to say 'the transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel'.*

3.3.3 Paragraph 36 states that *'All developments which generates significant amounts of movement should be required to provide a Travel Plan'.*

3.3.4 Paragraph 38 states *'Where practical, particularly within large scale developments, key facilities such as primary schools and local shops should be located within walking distance of most properties'*.

3.4 Local Policy

3.4.1 Essex Transport Strategy

3.4.1.1 Local transport policy is covered with the Essex County Council's document 'Essex Transport Strategy: the Local Transport Plan for Essex', published in June 2011. The overall aim for the strategy document is to:

- Help deliver the Council's long term vision, contained within 'EssexWorks' , of delivering the best quality of life for Essex residents;
- Support the delivery of the priorities for Essex identified within the Integrated County Strategy;
- Identify priorities for transport investment (both capital and revenue), placing transport improvements in their wider context;
- Support funding bids to a variety of sources (for example to the Local Sustainable Transport Fund), including bids to as yet unidentified funding streams that may be available in the future.

3.4.1.2 The local Transport Plan comprises two documents:

- The Essex Transport Strategy which sets out Essex County Council's vision for transport, the outcomes they aim to achieve over a fifteen year period, their policies for transport and the broad approach to implementing these; and
- An Implementation Plan (to be published) which will sets out in greater detail how the outcomes of the strategy will be delivered and monitored and Essex County Council's priorities for investment in the short-term.

3.4.1.3 The Essex Transport Strategy will seek to achieve five broad outcomes that have been developed in parallel with those being sought from the Council's Highways Strategic Transformation (HST) programme:

- Provide connectivity for Essex communities and international gateways to support sustainable economic growth and regeneration
- Reduce carbon dioxide emissions and improve air quality through lifestyle changes, innovation and technology
- Improve safety on the transport network and enhance and promote a safe travelling environment
- Secure and maintain all transport assets to an appropriate standard and ensure that the network is available for use
- Provide sustainable access and travel choice for Essex residents to help create sustainable communities.

3.4.1.4 For each of the outcomes listed above a series of challenges have been identified.

3.4.1.5 Saffron Walden is identified as a local centre in the Transport Plan and is described as follows:

"Saffron Walden is a historic town with a population of over 15,000 with opportunities for growth in the town limited by the historic street layout. The town is served by road via the M11 and by rail by the station at Audley End, situated some distance from the town."

3.4.1.6 The Transport Plan identifies priorities for local centres within West Essex which includes Saffron Walden. These priorities are set out below:

1. Providing for and promoting access by sustainable modes of transport to development areas
2. Improving passenger transport connections to and between the local centres, key services and Harlow
3. Improving the attractiveness and usability of streets and public spaces
4. Improving cycling and walking routes and promoting their greater use
5. Improving connections to London, working with Transport for London to make best use of and manage access to Underground links
6. Improving links with surrounding rural areas

3.4.2 Uttlesford District Council – Adopted Local Plan 2005

3.4.2.1 The 2005 adopted Local Plan which is still current sets out two policies GEN1 and GEN6 which are relevant to transport matters. These two policies are set out below:

Policy GEN1 – Access

Development will only be permitted if it meets all of the following criteria:

a) Access to the main road network must be capable of carrying the traffic generated by the development safely.
b) The traffic generated by the development must be capable of being accommodated on the surrounding transport network.
c) The design of the site must not compromise road safety and must take account of the needs of cyclists, pedestrians, public transport users, horse riders and people whose mobility is impaired.
d) It must be designed to meet the needs of people with disabilities if it is development to which the general public expect to have access.
e) The development encourages movement by means other than driving a car

Policy GEN6 –Infrastructure Provision to Support Development

Development will not be permitted unless it makes provision at the appropriate time for community facilities, school capacity, public services, transport provision, drainage and other infrastructure that are made necessary by the proposed development. In localities where the cumulative impact of developments necessitates such provision, developers may be required to contribute to the costs of such provision by the relevant statutory authority.

4.0 Existing Conditions

4.1 Road Network

4.1.1 The existing local highway infrastructure is shown on the plan enclosed in Appendix C.

4.1.2 The B1053 Radwinter Road is a single carriageway road which provides an east – west link between Saffron Walden and Radwinter. Within the vicinity of the site's access Radwinter Road is approximately 6.4m wide, to the west the road widens to accommodate a right turning lane for Tesco. To the west of the site access Radwinter Road is bound by 1m and 1.8m wide footways on the northern and southern sides of the carriageway respectively. To the east of the access a footway is only provided on the northern side of the carriageway. Radwinter Road is subject to a 30mph speed limit to the west of the access and de-restricted (60mph) to the east.

4.1.3 Shire Hill is a single carriageway road which serves predominately industrial development. Within the vicinity of the site's access Shire Hill is 6.6m wide. Shire Hill is a cul-de-sac which connects with Thaxted Road via a simple priority junction at its western extent. Shire Hill is bound by footways with a minimum width of 2m, is street lit and subject to a 30mph speed limit.

4.1.4 The B184 Thaxted Road is a single carriageway road which provides a north - south link between Saffron Walden and Radwinter. Within the vicinity of Shire Hill Thaxted Road is approximately 7.5m wide, bound by footways with a minimum width of 2m, is street lit and subject to a 30mph speed limit.

4.2 Pedestrian Facilities

4.2.1 The highway infrastructure within Saffron Walden is generally bound by footways on both sides of the carriageway. There are no dedicated footway facilities within the vicinity of the development that are not connected with the highway.

4.3 Cycle Facilities

4.3.1 There are no dedicated cycling facilities within the vicinity of the proposed development site.

4.4 Public Transport

4.4.1 Bus

4.4.1.1 The nearest existing bus stops for the proposed development are located at the bus interchange located at the Tesco's store off Radwinter Road, Radwinter Road and Elizabeth Way. The bus stops are located approximately 100m, 290m and 450m from the pedestrian / cyclist access located off Radwinter Road. The location of the existing bus stops is shown on the facilities plan enclosed in Appendix C. In the future when the RT Link is completed it is envisaged that the bus services will route via the RT Link shortening the walking distance to bus services.

4.4.1.2 General bus service frequencies and routes of buses utilising the bus stops located at the bus interchange located at the Tesco's store off Radwinter Road, Radwinter Road and Elizabeth Way are set out in table 4.4 below. Full time table information is enclosed in Appendix D. The information provided in the tables below and the appendices was correct at the time of publication.

Summary of bus services

Service	Route	Service Times	Day Time Frequency
Tesco Bus Interchange			
6	Bishops Stortford - Stansted Airport - Debden - Saffron Walden	Mon – Fri First ≈ 0815 Last ≈ 1925 Sat First ≈ 0815 Last ≈ 1625	Hourly
17	Saffron Walden - Radwinter - Great Sampford - Great Bardfield	Tue / Thur / Sat 1240	1 Service
101	Whittlesford - Duxford - Saffron Walden	Tue: Arrives Tesco only 0953	1 Service
301	Saffron Walden - Newport - Bishop's Stortford - Stansted Airport	Mon – Sat First ≈ 0712 Last ≈ 1847	Hourly
SB13	Saffron Walden - Wicken Bonhunt - Newport - Clavering	Tue / Fri 1305 & 1415	2 Services
SB27	Saffron Walden - Howlett End - Thaxted - Great Saling	Thur 1215	1 Service
34	Tesco Store - Highfields - High Street	Mon – Fri First ≈ 1055 Last ≈ 1732 Sat	4 Services 1 Service

		1020	
443	Newport - Audley End - Saffron Walden - Elmdon - Chrishall	Tue / Thur / Sat 1115, 1315, 1615	3 Services
Radwinter Road Bus Stops			
18	(Newport) - Saffron Walden - Sewards End - Hempstead - Haverhill	Mon – Sat First ≈ 0905 Last ≈ 1540	3/4 daily Irregular service
118	Newport - Saffron Walden - Radwinter - Birdbrook - Great Yeldham	Mon – Fri ≈1530 School days only	1 Service
417	Newport - Audley End - Saffron Walden - Great Sampford - Rayne	Mon – Fri ≈1530 School days only	1 Service
418	Newport - Radwinter - Great Saling	Mon – Fri ≈1530 School days only	1 Service
419	Finchingfield - Sampford - Radwinter - Saffron Walden - Newport	Mon – Fri ≈0820 School days only	1 Service
Elizabeth Way			
590	Audley End - Saffron Walden	AM Service from Saffron Walden only 0535, 0605, 0635, 0705 PM Service from Audley End only First ≈ 1759 Last ≈ 2105	Mon - Fri 4 Daily Mon - Fri 7 Daily Half hourly

Table 4.4

4.4.1.3 There are two regular bus services located within close proximity of the development. These bus services will offer residents of the development the opportunity to travel to Saffron Walden, Bishop Stortford and Stansted Airport via more sustainable forms of transport.

4.4.1.4 In addition to the above regular services there are a number of irregular services which will offer the residents of the development a chance to travel to destinations further afield using more sustainable forms of transport.

4.4.1.5 The proposed development will provide four bus stops on the future Radwinter Road to Thaxted Road link road. These bus stops, two in each direction will be located in agreement with Essex County Council and provide for any future bus routes which will utilise the Radwinter Road to Thaxted Road link road.

4.4.2 Rail

4.4.2.1 The nearest railway station is located within Audley End approximately 5.9km (3.7 miles) from the proposed development's access off Shire Hill. Audley End railway station is located on the Greater Anglian and Cross Country lines and provides onward connections to destinations including Stansted Airport, Cambridge, London Liverpool Street and Birmingham New Street. Service frequency varies but trains serve London every 10-20 minutes during peak periods.

4.4.2.2 Audley End railway station can be reached via the 590 bus service which enables potential rail passengers to make a fully sustainable multi-modal journey.

4.5 Recorded Accident Data

4.5.1 Recorded accident data was obtained from Essex County Council for the period from 30th August 2008 to 31st August 2013. A plan of the collision data obtained from Essex County Council is enclosed in Appendix H.

4.5.2 There are no accidents recorded in close proximity of the proposed access locations on to either Radwinter Road or Shire Hill.

4.5.3 Of the recorded accidents within Saffron Walden there is no significant theme which would suggest there are any geometric deficiencies.

4.5.4 From the reported accident data there does not appear to be a significant accident problem on the surrounding highway infrastructure. We therefore do not consider that the proposed development will result in conditions detrimental to highway safety.

4.6 Summary

4.6.1 The proposed development site is located to the east of Saffron Walden located at land off Radwinter Road. The site has two all movement vehicular access to Radwinter Road and Shire Hill. The development is provided with a further pedestrian / cyclist dedicated access to Radwinter Road.

4.6.2 The proposed development has adequate links to the existing walking and cycling infrastructure.

4.6.3 The nearest bus stops to the development are served by two regular bus services which will offer residents of the development the opportunity to travel to Saffron Walden, Bishop Stortford and Stansted Airport via more sustainable forms of transport. In addition a number of irregular bus services provide links to numerous destinations.

4.6.4 The nearest railway station is located within Audley End approximately 5.9km (3.7 miles) from the proposed development's access off Shire Hill. Audley End railway station provides onward connections to destinations including Stansted Airport, Cambridge, London Liverpool Street and Birmingham New Street. Service frequency varies but trains serve London every 10-20 minutes during peak Audley End railway station can be reached via the 590 bus service which enables potential rail passengers to make a fully sustainable multi-modal journey.

4.6.5 From the report accident data there does not appear to be a significant accident problem on the surrounding highway infrastructure. We therefore do not consider that the proposed development will result in conditions detrimental to highway safety.

5.0 Accessibility

5.1 Introduction

5.1.1 The review of the planning policy presented in section 3 of this report highlights the need for need for sustainable developments to have good accessibility to education, health facilities, employment, leisure and retail. Paragraph 38 of the National Planning Policy Framework states 'Where practical, particularly within large scale developments, key facilities such as primary schools and local shops should be located within walking distance of most properties'.

5.1.2 This section therefore considers the accessibility from the development, by modes of sustainable transport to local facilities including education, health services, employment, leisure and retail. A plan showing the location of key local facilities local to the development site is enclosed in Appendix C.

5.1.3 Walking

5.1.3.1 With reference to the Chartered Institution of Highways and Transportation (CIHT) publication 'Guidelines for Providing for Journeys on Foot' (2000), it is suggested that around 80% of walk journeys and walk stages are less than 1 mile (1610m). This guidance also provides 'suggested acceptable walking distances' which are set out in table 5.1 below.

5.1.3.2 Indicative walking time calculations have been calculated assuming a 'typical' walking speed of approximately 1.4m/s or 3mph. These are shown against the suggested walking distances set out in table 5.1 below.

Walking Distance and Journey Times

	Town Centre		Commuting / School / Sight Seeing		Elsewhere	
	Distance (m)	Time (mins)	Distance (m)	Time (mins)	Distance (m)	Time (mins)
Desirable	200	2.4	500	6	400	4.8
Acceptable	400	4.8	1000	11.9	800	9.5
Preferred Maximum	800	9.5	2000	23.8	1200	14.3

Table 5.1

5.1.3.3 A plan showing local facilities and walking distances is enclosed in Appendix C.

5.1.4 Cycling

5.1.4.1 Section 3.10 of the Local Transport note 01/04 states that generally a 4km cycle distance is considered acceptable.

5.1.4.2 Assuming a cycling speed of 12kmph the maximum accepted time for a cycling journey is 20mins.

5.1.4.3 A plan showing the location of key local facilities local to the development site is enclosed in Appendix E. It can be seen that all facilities within Saffron Walden are located within a 2km, preferred maximum, radial distance from the proposed development's access.

5.2 Accessibility to Education

5.2.1 The proposed development is located within approximately 800m and 1300m walking distance of the nearest existing primary school from the Radwinter Road and Shire Hill accesses respectively, see Appendix C. This is within the acceptable and preferred maximum walking distance for school journeys as set out in table 5.1 above.

5.2.2 The nearest secondary school is located within approximately 2000m and 1600m of the proposed development from the Radwinter Road and Shire Hill accesses respectively, see Appendix C. This school is with the preferred maximum walking distance.

5.2.3 The proposed development is shown to be located within acceptable walking and cycling distances of schools.

5.3 Accessibility to Health

5.3.1 The nearest doctors' is located approximately 1600m and 1800m from the proposed development from the Radwinter Road and Shire Hill accesses respectively, see Appendix C. The doctors' surgery is located within the preferred maximum walking distance.

5.3.2 A dentist is located approximately 350m from the Radwinter Road access. The dentist is located within the desirable walking distance, see Appendix C.

5.3.3 The proposed development is shown to be located within acceptable walking and cycling distances of health services.

5.4 Accessibility to Retail and Leisure

5.4.1 The development site is located adjacent to a Tesco store with Saffron Walden town centre located approximately 1400m from the proposed development site. The proposed development is therefore located within desirable and preferred maximum walking distances of retail destinations.

5.4.2 The proposed development is shown to be located within acceptable and cycling distances of retail and leisure services.

5.5 Accessibility to Employment

5.5.1 The proposed development is located adjacent to Shire Hill and Tesco and is located within Close proximity of Saffron Walden Community Hospital all of which will offer employment opportunities for residents within close proximity. Further employment opportunities off Ashdon Road and Saffron Walden town centre are available within preferred maximum walking distances.

5.5.2 The proposed development is shown to be located within suitable walking and cycling distances of employment opportunities.

6.0 Trip Generation and Distribution

6.1 The proposed development will comprise residential dwellings, a care village and B1 Offices. Vehicle trip generation rates have been obtained from Essex County Council. The vehicle trip rates have been used for the Thaxted Road development and the Council's assessment into the provision of the RT Link (Uttlesford Local Plan Highway Impact Assessment dated October 2013). This ensures a consistency of approach across the various assessments. The vehicle trip rates are set out in table 6.1 below.

Proposed Vehicle Trip Generation Rate

	AM Peak (0800-0900)			PM Peak (1700-1800)		
Use	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential (private) per dwelling	0.156	0.406	0.562	0.376	0.227	0603
Care Village per bed	0.081	0.069	0.150	0.050	0.077	0.127
B1 Office per 100m^2	2.173	0.325	2.498	0.430	2.550	2.980

Table 6.1

6.2 Using the above trip generation rates it is possible to calculate the predicted number of vehicle trips associated with the proposed development. The predicted vehicle trips are shown in table 6.2 below based on a quantum of development listed below:

- Residential Dwellings – 260 no.
- Care Village – 42 beds
- B1 Offices – GFA circa 1800m^2

Proposed Vehicle Trip Numbers

	AM Peak (0800-0900)			PM Peak (1700-1800)		
Use	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential	41	106	147	98	59	157
Care Village	3	3	6	2	3	5
B1 Office	39	6	45	8	46	54
	83	114	197	108	108	216

Table 6.2

6.3 To predict the number of trips generated by more sustainable forms of transport, travel to work data has been obtained from the 2011 Census for the Saffron Walden Shire ward which the proposed development is located within. The journey to work data is shown in table 6.3 below.

Method of Travel to Work Resident Population – Saffron Walden Shire Ward 2011 Census	
Mode	Percentage
Driving a car or van	67.0%
On foot	17.8%
Train	6.0%
Passenger in a car or van	5.1%
Bus, minibus or coach	2.1%
Bicycle	1.2%
Motorcycle, scooter or moped	0.8%

Table 6.3

6.4 Using the above modal split information it is possible to predict the number of trips made using more sustainable forms of transport. Whilst the data does not reflect the fact that not all peak period trips are made to work it offers a good reflection of the actual circumstances. The predicted number of more trips made using more sustainable forms of transport is set out in table 6.4 below.

Proposed More Sustainable Trip Numbers						
	AM Peak (0800-0900)			PM Peak (1700-1800)		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total
On Foot	15	20	35	19	19	38
Train	5	7	12	6	7	13
Car Passenger	4	6	10	6	6	11
Bus	2	2	4	2	2	4
Bicycle	1	1	2	1	1	3
Motorcycle	1	1	2	1	1	2

Table 6.4

6.5 Vehicle trips generated by the proposed development have been distributed on to the surrounding highway infrastructure using 2001 origin and destination census data. This census data and assignment is enclosed in Appendix I. The proposed assignment of these vehicles is shown on the highway network vehicle trip diagrams enclosed in Appendix J.

6.6 The main destinations for workers can be summarised as shown in the table:

Vehicle Distribution		
Destination	Proportion	Assignment
South - southern Uttlesford DC locations – East Hertfordshire - Harlow	42.7%	Shire Hill / Thaxted Road / Peasland Road / B1052
North – Cambridgeshire, and northern Uttlesford DC locations	37.8%	Radwinter Rd / Elizabeth Way / Ashdon Rd / B184
South - southern Uttlesford DC locations	8.6%	Shire Hill / Thaxted Road
West – Saffron Walden	6.2%	Radwinter Rd
East	1.1%	Radwinter Road East
Local – Saffron Walden Shire Ward	3.6%	Radwinter Road 10% Shire Hill 90%

Table 6.6

7.0 Sustainable Modes of Transport Impact

7.1 Introduction

7.1.1 This section of the Transport Assessment will assess the impact of the proposed development on the local sustainable transport infrastructure.

7.1.2 The trip generation for the sustainable modes of transport has been calculated in section 6. The sustainable trips predicted from the proposed development are summarised in table 7.1 below.

Proposed More Sustainable Trip Numbers

	AM Peak (0800-0900)			PM Peak (1700-1800)		
Mode	Arrivals	Departures	Total	Arrivals	Departures	Total
On Foot	15	20	35	19	19	38
Train	5	7	12	6	7	13
Car Passenger	4	6	10	6	6	11
Bus	2	2	4	2	2	4
Bicycle	1	1	2	1	1	3
Motorcycle	1	1	2	1	1	2

Table 7.1

7.2 Walking

7.2.1 The proposed development is predicted to generate 35 and 38 additional pedestrian trips during the morning and evening peak hours respectively. The proposed development will be connected to the existing pedestrian network via footways on the Radwinter Road and Shire Hill

7.2.2 The new pedestrian trips equates to one journey in any direction every 1.7 minutes. This small number of pedestrians can be accommodated on the existing and proposed pedestrian infrastructure.

7.3 Cycling

7.3.1 The proposed development is predicted to generate approximately 2 and 3 cyclist trips in the morning and evening peak periods respectively. The number of predicted cyclist trips is small and could be accommodated on the existing highway infrastructure.

7.3.2 The proposed development will incorporate cycle parking provision for each dwelling.

7.4 Public Transport

7.4.1 The proposed development is predicted to generate approximately 4 additional bus journeys in the both the morning and evening peak periods. The number of predicted bus journeys is small and could be accommodated within existing services.

8.0 Vehicular Impact

8.1 This section will assess the impact of the proposed development on the existing vehicular infrastructure.

8.2 Area of Assessment

8.2.1 The area of assessment has been discussed with Essex County Council in pre-application discussions with the following junctions highlighted for further assessment:

1. Radwinter Road / Elizabeth Way;
2. Elizabeth Way / Ashdon Road;
3. Ashdon Road / Chaters Hill;
4. Ashdon Road/ Castle Hill / Common Hill / Castle Street;
5. B184 High Street / Church Street;
6. Bridge Street / Castle Street / High Street / Myddylton Place;
7. Little Walden Road / Pound Walk / Castle Hill / Castle Street;
8. Radwinter Road / Thaxted Road;
9. Shire Hill / Thaxted Road;
10. Thaxted Road / Peasland Road;
11. Debden Road / Mount Plesant Road / Borough Lane; and
12. London Road / Borough Lane.

8.3 Background Traffic

8.3.1 Vehicle counts have been obtained from Essex County Council for junctions 5, 6, 8, 10, 11 and 12. These counts were completed in 2012. The remaining junctions 1, 2, 3, 4, 7 and 9 were counted during October 2013. The traffic count data is enclosed in Appendix K.

8.3.2 It should be noted that this development will also consider the impact of committed schemes within close proximity of the development site.

8.4 Committed Development Traffic

8.4.1 As discussed with Essex County Council the impact assessment will also take account of development traffic from committed schemes. The developments included are set out below in table 8.4:

Description of Committed Developments Included in Assessment		
	Dwellings	**Employment**
Thaxted Road UTT/13/2060/OP Decision Pending	300	-
Site At Thaxted Road (former Civic Amenity And Granite Site) UTT/13/0268/FUL Approved		Discount Food Retail – 1,578m^2 Non-Fod Retail – 3,424m^2 Outdoor Garden Centre- 1,114m^2 Café – 190m^2
Extension to Tesco Store UTT/1323/09/FUL Approved		A1 Retail – 1,114 m^2
Mount Pleasant Road UTT/0188/10/FUL	76	
Care Home – Radwinter Rd UTT/13/1981/OP Decision Pending		60 unit care home
Ashdon Road UTT/13/2423/OP Decision Pending	167	Building Merchants – 1.25 ha B1 (a) Offices – 0.47 ha B1 (a, b + c) Offices – 0.4 ha B1, B2, B8 – 1.16 ha Local Centre – 0.86 ha Local Retail – 279m^2

Table 8.4

8.4.2 Transport Assessments for the above committed schemes have been obtained from the Uttlesford District Council's planning website and traffic data for the junctions to be assessed has been extracted. The combined vehicle trips at each of the junctions as a result of the above committed developments can be seen in Appendix J.

8.5 Assessment Periods

8.5.1 The impact of the development will be considered on the surrounding highway infrastructure during the morning and evening peak periods of 0800-0900 and 1700-1800.

8.5.2 In line Department of Transport document 'Guidance for Transport Assessment' future year assessments have been completed for 2018 or five years after the planning application was submitted.

8.5.3 A further future assessment year of 2026 has been utilised to access the impact on the site's Radwinter Road access which will form part of a future Radwinter Road to Thaxted Road link.

8.5.4 To adjust the background traffic counts to the assessment years of 2018 and 2026 traffic growth factors have been obtained from Essex Highways document 'Uttlesford Local Plan Highway Impact Assessment' dated October 2013. This ensures that this assessment is in line with this recent assessment completed within Saffron Walden. It should also be noted that the 2012-2018 / 26 factors have been applied to the periods 2013-18 / 26, this ensures a conservative and robust approach has been undertaken. The growth factors are set out in table 8.1 below.

Tempro Growth Factors		
	AM Peak	PM Peak
2012-2018	1.038	1.055
2012-2026	1.069	1.113

Table 8.5

8.6 Junction Assessments

8.6.1 The junctions listed in section 8.1 have been assessed where appropriate utilising TRL software Junctions 8 and Transyt. The results of the junction assessments are set out below.

8.6.2 J1: Radwinter Road / Elizabeth Way

8.6.2.1 A junction assessment of the Radwinter Road / Elizabeth Way traffic signal control junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix L.

Radwinter Road / Elizabeth Way – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	DoS (%)	Max Queue	DoS (%)	Max Queue	DoS (%)	Max Queue
A	20	2	21	3	1	1
A – RTL	18	2	22	3	4	1
B	5	0	5	0	5	0
C	40	6	42	6	2	0
C – RTL	0	0	0	0	0	0
D	58	6	60	6	2	0

Table 8.6.2a

Radwinter Road / Elizabeth Way – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	DoS (%)	Max Queue	DoS (%)	Max Queue	DoS (%)	Max Queue
A	33	4	35	5	2	1
A – RTL	18	2	23	3	5	1
B	3	0	3	0	0	0
C	42	6	45	7	3	1
C – RTL	0	0	0	0	0	0
D	64	7	67	8	3	1

Table 8.6.2b

8.6.2.2 It can be seen that the Radwinter Road / Elizabeth Way junction operates within capacity in 2018 both without and with the proposed development during both peak periods.

8.6.3 J2: Elizabeth Way / Ashdon Road

8.6.3.1 A junction assessment of the Elizabeth Way / Ashdon Road simple priority junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix M.

Elizabeth Way / Ashdon Road– AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.78	3	0.89	6	0.11	3
C-B	0.19	0	0.26	0	0.07	0

Table 8.6.3a

Elizabeth Way / Ashdon Road – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.66	2	0.76	3	0.10	1
C-B	0.42	1	0.50	1	0.08	0

Table 8.6.3b

8.6.3.2 It can be seen that the Elizabeth Way / Ashdon Road junction will generally operate within capacity with RFC values below 0.85. However, in the morning peak period in 2018 with the proposed development traffic it can be seen that RFC values will peak at 0.89 just above the 0.85 capacity threshold.

8.6.3.3 Whilst the junction is shown to operate slightly over capacity in the 2018 morning peak periods this only represents an increase in queuing length from 3 vehicles to 6 vehicles. It is considered that as the junction operates under the maximum capacity threshold of 1 and the proposed and committed developments represent a significant proportion of the proposed traffic within Saffron Walden over the coming years that mitigation is not required.

8.6.4 J3: Ashdon Road / Chaters Hill

8.6.4.1 A junction assessment of the Ashdon Road / Chaters Hill simple priority junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix N.

Ashdon Road / Chaters Hill – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.33	1	0.34	0	0.01	1
C-B	0.00	0	0.00	0	0	0

Table 8.6.4a

Ashdon Road / Chaters Hill – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.35	1	0.36	1	0.01	0
C-B	0.00	0	0.00	0	0	0

Table 8.6.4b

8.6.4.2 It can be seen that the Ashdon Road / Chaters Hill junction operates within capacity in 2018 both without and with the proposed development during both peak periods.

8.6.5 J4 - Ashdon Road/ Castle Hill / Common Hill / Castle Street

8.6.5.1 A junction assessment of the Ashdon Road/ Castle Hill / Common Hill / Castle Street mini roundabout junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix O.

Ashdon Road/ Castle Hill / Common Hill / Castle Street – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Ashdon Rd	0.99	17	1.07	32	0.08	15
Common Hill	0.35	1	0.36	1	0.01	0
Church St	0.00	0	0.00	0	0	0
Castle Hill	0.75	3	0.79	4	0.04	1

Table 8.6.5a

Ashdon Road/ Castle Hill / Common Hill / Castle Street – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Ashdon Rd	0.57	1	0.63	2	0.06	1
Common Hill	0.52	1	0.54	1	0.02	0
Church St	0.00	0	0.00	0	0	0
Castle Hill	0.70	2	0.75	3	0.05	1

Table 8.6.5b

8.6.5.2 It can be seen that the Ashdon Road/ Castle Hill / Common Hill / Castle Street junction will generally operate within capacity with RFC values below 0.85. However, in the morning peak period in 2018 both without and with the proposed development traffic it can be seen that RFC values will peak at 0.99 and 1.07 respectively.

8.6.5.3 The proposed development results in a very minor increase in RFC values which are unlikely to be noticeable above general fluctuations in background traffic levels. However, a nil detriment mitigation strategy has been devised for the junction, see results in table 8.7.5c, 8.7.5d and Appendix O. To restore capacity to Ashdon Road it is necessary to increase the entry width from 4.44m to 4.8m an increase of 360mm. This is a small increase to the geometry of the Ashdon Road and would not make a significant difference to the operation of the junction. It is therefore proposed that a financial contribution of £15,000 be made to Essex County Council to be used on traffic mitigation works within Saffron Walden rather than completing the required mitigation works.

Ashdon Road/ Castle Hill / Common Hill / Castle Street – AM Peak 0800-0900 – 2018 Nil Detriment						
	Background + Committed		Background + Committed + Development – Nil Det		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Ashdon Rd	0.99	17	0.99	17	0	0
Common Hill	0.35	1	0.36	1	0.01	0
Church St	0.00	0	0.00	0	0	0
Castle Hill	0.75	3	0.79	4	0.04	1
Table 8.6.5c						

Ashdon Road/ Castle Hill / Common Hill / Castle Street – PM Peak 1700-1800 – 2018 Nil Detriment						
	Background + Committed		Background + Committed + Development – Nil Det		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Ashdon Rd	0.57	1	0.59	1	0.02	0
Common Hill	0.52	1	0.54	1	0.02	0
Church St	0.00	0	0.00	0	0	0
Castle Hill	0.70	2	0.75	3	0.05	1
Table 8.6.5d						

8.6.6 J5 - B184 High Street / Church Street

8.6.6.1 A junction assessment of the B184 High Street / Church Street simple priority junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix P.

B184 High Street / Church Street – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	1.21	60	1.30	86	0.09	26
C-AB	0.00	0	0.00	0	0	0

Table 8.6.6a

B184 High Street / Church Street – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-AC	0.98	13	1.07	27	0.09	14
C-AB	0.00	0	0.00	0	0	0

Table 8.6.6b

8.6.6.2 The existing High Street / Church Street junction is shown to operate in 2018 over capacity in all periods both without and with the proposed development. The impact of the development is small increasing RFC values by 0.09 in both the morning and evening peak periods.

8.6.6.3 Whilst the junction operates over capacity in the peak periods there is limited scope for geometric improvements at the junction due to the limited extent of highway land. Due to a lack of available highway land and relatively small impact of the proposed development it is not intended to carry out any nil detriment mitigation works at this junction.

8.6.7 J6 - Bridge Street / Castle Street / High Street / Myddylton Place

8.6.7.1 A junction assessment of the Bridge Street / Castle Street / High Street / Myddylton Place simple priority cross roads junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix Q.

Bridge St / Castle St / High St / Myddylton Place – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.00	0	0.00	0	0	0
A-BCD	0.00	0	0.00	0	0	0
D-ABC	0.00	0	0.00	0	0	0
C-ABD	0.26	1	0.28	1	0.02	0

Table 8.6.7a

Bridge St / Castle St / High St / Myddylton Place – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.00	0	0.00	0	0	0
A-BCD	0.00	0	0.00	0	0	0
D-ABC	0.00	0	0.00	0	0	0
C-ABD	0.33	1	0.35	1	0.02	0

Table 8.6.7b

8.6.7.2 It can be seen that the Bridge Street / Castle Street / High Street / Myddylton Place junction operates within capacity in 2018 both without and with the proposed development during both peak periods.

8.6.8 J7 - Little Walden Road / Pound Walk / Castle Hill / Castle Street

8.6.8.1 A junction assessment of the Little Walden Road / Pound Walk / Castle Hill / Castle Street traffic signal control junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix R.

Little Walden Rd / Pound Walk / Castle Hill / Castle Street – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.00	0	0.00	0	0	0
A-D	0.00	0	0.00	0	0	0
D-AB	0.25	0	0.27	0	0.02	0
D-BC	0.49	1	0.56	1	0.07	0
C-B	0.00	0	0.00	0	0	0

Table 8.7.8a

Little Walden Rd / Pound Walk / Castle Hill / Castle Street – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-ACD	0.00	0	0.00	0	0	0
A-D	0.00	0	0.00	0	0	0
D-AB	0.64	2	0.92	5	0.28	3
D-BC	0.79	3	0.93	8	0.14	5
C-B	0.00	0	0.00	0	0	0

Table 8.7.8b

8.6.8.2 It can be seen that the Little Walden Road / Pound Walk / Castle Hill / Castle Street junction will generally operate within capacity with RFC values below 0.85. However, in the evening peak period in 2018 with the proposed development traffic it can be seen that RFC values will peak at 0.92 and 0.93 just above the 0.85 capacity threshold.

8.6.8.3 Whilst the junction is shown to operate slightly over capacity in the 2018 evening peak periods this only represents an increase in queuing length from 2/3 vehicles to 3/5 vehicles. It is considered that as the junction operates under the maximum capacity threshold of 1 and the proposed and committed developments represent a significant proportion of the proposed traffic within Saffron Walden over the coming years that mitigation is not required.

8.6.9 J8 - Radwinter Road / Thaxted Road

8.6.9.1 The proposed development is only predicted to generate 12 and 13 vehicle trips during the morning and evening peak period respectively. This is considered only a small increase in vehicle trips equivalent to one new vehicle every 5 minutes. This small increase in vehicles is unlikely to have a significant impact on the operation of the junction.

8.6.9.2 Further the creation of a link between Radwinter Road and Thaxted Road via the formation of a new access off Shire Hill is likely to result in a number of vehicles by-passing this junction. Thus the number of vehicles utilising this junction is likely to decrease. Therefore further assessment of this junction is not considered necessary.

8.6.10 J9 - Shire Hill / Thaxted Road

8.6.10.1 A junction assessment of the Shire Hill / Thaxted Road simple priority junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix S.

Shire Hill / Thaxted Road – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.09	0	0.18	0	0.09	0
B-A	0.13	0	0.15	0	0.02	0
C-AB	0.45	1	0.56	2	0.11	1

Table 8.7.10a

Shire Hill / Thaxted Road – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.38	1	0.5	1	0.12	0
B-A	0.34	1	0.39	1	0.05	0
C-AB	0.13	0	0.27	1	0.14	1

Table 8.7.10b

8.6.10.2 It can be seen that the Shire Hill / Thaxted Road junction operates significantly within capacity in 2018 both without and with the proposed development during both peak periods.

8.6.10.3 The formation of a development access with Shire Hill will result in vehicles by-passing the Radwinter Road / Thaxted Road junction further to the north. It is difficult to quantify the exact volume of traffic which will make this by-pass movement. It is considered that this new route will offer options to vehicles to by-pass known congestion points and is not designed as a relief road. As such it is considered that a junction assessment is not required. Vehicles will utilise the by-pass route via Shire Hill to a point where there are benefits to using this access over existing routes. Vehicles will stop utilising this alternative route when it reaches capacity and no longer provides a benefit over existing routes.

8.6.11 J10 - Thaxted Road / Peasland Road

8.6.11.1 A junction assessment of the Thaxted Road / Peasland Road mini roundabout junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix T.

Thaxted Road / Peasland Road – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Thaxted Rd (S)	0.52	1	0.54	1	0.02	1
Peasland Rd	0.77	3	0.84	5	0.07	2
Thaxted Rd (N)	0.40	1	0.48	1	0.08	1

Table 8.7.11a

Thaxted Road / Peasland Road – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
Thaxted Rd (S)	0.44	1	0.47	1	0.03	1
Peasland Rd	0.84	5	0.92	9	0.08	4
Thaxted Rd (N)	0.90	7	0.98	15	0.08	8

Table 8.7.11b

8.6.10.2 It can be seen that the Thaxted Road / Peasland Road junction operates within capacity in 2018 in the AM peak period. During the PM peak period one of the arms, Thaxted Road South, is over capacity without the development and both Thaxted Road South and Peasland Road are over capacity with the proposed development. The proposed development will have a small impact on the operational capacity of the existing junction altering RFC values by a maximum of 0.08.

8.6.10.3 The above assessment of the junction is based on the existing mini roundabout geometry. This shows that with the proposed development and all expected growth the junction will operate below the maximum capacity threshold of 1. However, as part of the proposed 300 dwelling development located off Thaxted Road junction signalisation improvements will be completed. These improvements will provide spare capacity at the junction which could accommodate the vehicles associated with this development. We therefore do not consider that further assessment or mitigation works are required.

8.6.12 J11 - Debden Road / Mount Pleasant Road / Borough Lane

8.6.12.1 A junction assessment of the Debden Road / Mount Pleasant Road / Borough Lane simple priority crossroads junction has been completed. The results of the assessment summarised in the table below with full input data and results enclosed in Appendix U.

Debden Road / Mount Pleasant Road / Borough Lane – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-CD	0.51	1	0.66	2	0.15	1
B-AD	0.45	1	0.58	1	0.13	0
A-BCD	0.05	0	0.05	0	0	0
D—ACC	0.36	1	0.47	1	0.11	0
C-ABD	0.29	1	0.29	1	0	0

Table 8.6.12a

Debden Road / Mount Plesant Road / Borough Lane – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
B-CD	0.61	1	0.79	3	0.18	2
B-AD	0.51	1	0.70	2	0.19	1
A-BCD	0.03	0	0.03	0	0	0
D—ACC	0.55	1	0.69	2	0.14	1
C-ABD	0.27	0	0.27	0	0	0

Table 8.6.12b

8.6.12.2 It can be seen that the Bridge Street / Castle Street / High Street / Myddylton Place junction operates within capacity in 2018 both without and with the proposed development during both peak periods.

8.6.13 J12 - London Road / Borough Lane

8.6.13.1 A junction assessment of the London Road / Borough Lane mini roundabout junction has been completed. The results of the assessment summarised in the table below with full input data and results enclosed in Appendix V.

London Road / Borough Lane – AM Peak 0800-0900 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
London Road	0.85	5	0.85	5	0	0
Borough Lane	0.79	3	0.93	8	0.14	5
Audley End	0.62	2	0.66	2	0.04	0

Table 8.6.13a

London Road / Borough Lane – PM Peak 1700-1800 – 2018						
	Background + Committed		Background + Committed + Development		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
London Road	0.88	6	0.88	6	0	0
Borough Lane	0.58	1	0.71	2	0.13	1
Audley End	0.69	2	0.74	3	0.05	1

Table 8.6.13b

8.6.13.2 During the AM peak periods the junction generally operates within capacity with the exception of the Borough Lane arm where RFC values increase by 0.14 from 0.79 to 0.93 as a result of the proposed development. During the evening peak periods all arms with the exception of London Road operate within capacity. The proposed development does not alter the RFC values on this arm.

8.6.13.3 The proposed development results in a minor increase in RFC values on the Borough Lane arm of the junction during the AM peak period. A nil detriment mitigation strategy has been devised for the junction, see results in table 8.7.13c, 8.7.13d and Appendix V. To restore capacity to Borough Lane it is necessary to increase the entry width from 3.71m to 4.0m an increase of 290mm and effective flare length from 3.9m to 6m and increase of 2.1. This is a small increase to the geometry of Borough Lane will reduce the RFC value to 0.84, with capacity, but is unlikely to result in a significant difference to the operation of the junction. It is therefore proposed that a financial contribution of £15,000 be made to Essex County Council to be used on traffic mitigation works within Saffron Walden rather than completing the required mitigation works.

London Road / Borough Lane – AM Peak 0800-0900 – 2018 - Nil Detriment						
	Background + Committed		Background + Committed + Development – Nil Det		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
London Road	0.85	5	0.85	5	0	0
Borough Lane	0.79	3	0.84	5	0.05	2
Audley End	0.62	2	0.66	2	0.04	0

Table 8.6.13c

London Road / Borough Lane – PM Peak 1700-1800 – 2018 - Nil Detriment						
	Background + Committed		Background + Committed + Development – Nil Det		Difference	
	Max RFC	Max Queue	Max RFC	Max Queue	Max RFC	Max Queue
London Road	0.88	6	0.88	6	0	0
Borough Lane	0.58	1	0.65	2	0.07	1
Audley End	0.69	2	0.74	3	0.06	1

Table 8.6.13d

8.6.14 Radwinter Road Development Access

8.6.14.1 A junction assessment of the new right turning lane proposed development access junction has been completed. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix W.

Radwinter Road Development Access				
	AM Peak 0800-0900 – 2018		AM Peak 0800-0900 – 2018	
	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.11	0	0.10	0
B-A	0.01	0	0.00	0
C-B	0.08	0	0.08	0

Table 8.6.14a

8.6.14.2 It can be seen that the development access will operate within capacity during 2018 with all committed development.

8.6.14.3 A further capacity assessment has been completed for an analysis year of 2026 assuming that the full Radwinter Road to Thaxted Road link is operational. The results of the assessment are summarised in the table below with full input data and results enclosed in Appendix X.

Radwinter Road Development Access				
	AM Peak 0800-0900 – 2026		AM Peak 0800-0900 – 2026	
	Max RFC	Max Queue	Max RFC	Max Queue
B-C	0.44	1	0.58	1
B-A	0.62	2	0.84	5
C-B	0.15	0	0.25	0

Table 8.6.14b

8.6.14.4 It can be seen that the development access will operate within capacity during 20 with all committed development and the proposed Radwinter Road / Thaxted Road link in full operation.

9.0 School Development

9.1 An alternative masterplan is also submitted as part of the outline planning application this shows 1.2 hectares of the site allocated for a one form entry primary school. The above assessment has been completed based on a development comprising the development scale and trip numbers shown in table 9.1 below.

Proposed Vehicle Trip Numbers – Assessment

	AM Peak (0800-0900)			PM Peak (1700-1800)		
Use	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential 260 Dwellings	41	106	147	98	59	157
Care Village 42 Beds	3	3	6	2	3	5
B1 Office 1800m^2	39	6	45	8	46	54
	83	114	197	108	108	216

Table 9.1

9.2 The alternative application with a school would comprise up to 200 dwellings, a retirement village comprising 102 beds, up to 1800m^2 gross floor area of B1 Office and a 210 pupil school. The school based development is shown in Appendix Z.

9.3 Vehicle trip generation rates for the school have been obtained from Essex County Council. Further details of the vehicle trips can be found in section 6.2. The school's vehicle trip rates are set out in table 9.3 below.

Proposed Vehicle Trip Generation Rate

	AM Peak (0800-0900)			PM Peak (1700-1800)		
Use	Arrivals	Departures	Total	Arrivals	Departures	Total
School per pupil	0.230	0.157	0.387	0.090	0.021	0.030

Table 9.3

9.4 Based on this development scale the development is predicted to generate the following number of trips

Proposed Vehicle Trip Numbers – Assessment						
	AM Peak (0800-0900)			PM Peak (1700-1800)		
Use	Arrivals	Departures	Total	Arrivals	Departures	Total
Residential 200 Dwellings	31	81	112	75	45	120
Care Village 102 Beds	8	7	15	5	8	13
B1 Office 1800m^2	39	6	45	8	46	54
School 210 Pupils	48	33	81	19	4	23
	127	127	254	107	104	211

Table 9.2

9.5 With the introduction of a school it can be seen that the development is predicted to generate a number of additional vehicle trips in the morning peak period above the assessment development scale. These additional vehicle trips are associated with the school.

9.6 Although the introduction of a school is likely to generate additional vehicle trips the majority of these with the exception of staff will be associated with the local population from the new dwellings constructed off Radwinter Road and dwellings associated with the future phases of the Local Policy land intended to provided up to 800 dwellings. Hence, the majority of the vehicle trips associated with the school will not be on the wider existing highway network and only associated with the local development roads constructed as part of this phase and any future phases.

9.7 It should also be noted that the vehicle trips associated with the school will also include a quantity of double counting as vehicle trips to the school will also be included in the number of vehicle trips generated by the residential development during the peak periods.

9.8 The school will have its own Travel Plan and as part of the Residential Travel Plan it is envisaged that Walking Buses will be created within the community to encourage sustainable travel to the school. These measures will minimise the number of vehicle trips generated by the school.

9.9 It is therefore considered that further assessment is not required of the wider highway infrastructure as the majority of school trips will not be generated on the wider existing highway network and will include a quantity of double counting with the residential dwellings.

10.0 Conclusions

10.1 The proposed residential development is located to the east of Saffron Walden at land off Radwinter Road. The proposed development is bound by Radwinter Road to the north, agricultural land to the east and south and commercial development to the west.

10.2 The proposed development will comprise a mixed development comprising up to 260 dwellings, a retirement village comprising 42 beds and up to 1,800m^2 gross floor area of B1 Offices with associated highway infrastructure and public open space.

10.3 The proposed development is shown to be adequately served and accessible to more sustainable modes of transport. The proposed development has good accessibility to education, health, employment, retail and leisure facilities. The proposed development will provide four bus stops for future bus services.

10.4 The proposed development will be access via an enhanced access off Radwinter Road and a new access off Shire Hill.

10.5 The proposed development is not predicted to have an adverse impact on the sustainable transport infrastructure.

10.6 Junction assessments have been completed at 11 junctions within Saffron Walden. It is shown that the proposed development typically does not have a significant adverse impact on the operation of any of these junctions.

10.7 A nil detriment solution has been identified for two junctions namely Ashdon Road / Castle Hill / Common Hill / Castle Street and London Road / Borough Land. The mitigation requirements are minor and would not have a noticeable impact on the real operation of the junction. It is therefore proposed that a financial contribution of £30,000 is made to Essex County Council for use on highway improvement schemes within Saffron Walden.

10.8 Framework travel plans have been produced for the residential and workplace aspects of the development. These Travel Plans which will be secured under a S106 agreement will target a reduction in single occupancy vehicle trips.

10.9 From the reported accident data there does not appear to be a significant accident problem on the surrounding highway infrastructure. We therefore do not consider that the proposed development will result in conditions detrimental to highway safety.

10.10 There are therefore no reasons on highway grounds why planning permission for the present development should not be granted.

10.11 An assessment of the alternative layout with a school is shown not to have a more significant impact on the highway infrastructure than a layout without a school.