Uttlesford Local Plan Highway Impact Assessment

Assessment of Highway Impact of Potential Local Plan Sites

October 2013

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1 Introduction

Uttlesford District Council (UDC) required an evaluation of the Uttlesford Local Plan (ULP) proposals, to identify its likely highway impact and to identify any necessary mitigation measures.

Essex Highways were commissioned to undertake a study to assess the existing situation in key locations, and then assess the implications of the ULP in highways terms at key junctions, and identify and evaluate mitigation measures, if required. Two future years, 2018 and 2026 have been assessed, with a base year of 2012. This is in order to more clearly understand the impact of already committed development, and then the cumulative effect of the ULP proposals. The study has included extensive co-ordination with both UDC and Essex County Council (ECC) in order to provide the necessary evidence base to support the ULP framework.

The specific objectives of this project were to estimate the impact of the preferred ULP options on specific links and junctions in Great Dunmow, Saffron Walden and Newport. Where this was subsequently determined to be appropriate, mitigation measures were investigated and their effectiveness reviewed. The ULP impacts were assessed for the traditional weekday peak hours within each key area. The impact of all the ULP proposals over the wider network were then assessed in order to discuss their likely impact on the strategic road network, specifically on the A120 and M11 Junction 8.

This report summarises the work that Essex Highways have carried out to date in assessing the impact of the potential ULP sites. The outputs from this study will be considered as part of the evidence base to accompany the Uttlesford Local Plan.

2 Future Development Sites & Study Area

2.1 Residential Development in Uttlesford District

Information about the proposed Local Plan development was based initially on the June 2012 Draft Local Plan. However, this has been supplemented during the course of the study by additional information and updates from UDC officers. Committed development information together with ULP site information used in the analysis was supplied by UDC in the form of a spreadsheet which included the development details and projected trajectories. This spreadsheet file, the most up-to-date version of which is based at October 2012, is included in the attached disk, at Appendix A.

It should be noted that the capacity assessments subsequently undertaken and reported herein are based on the developments set out above. Any subsequent changes in policy, or development assumptions not included in this chapter could be expected to have an impact on the analysis.

Table 2-1 below shows the total numbers of dwellings in each settlement arising from the list of committed and ULP developments provided by UDC and their expected completion period.

Table 2-1: Dwelling numbers by settlement and future year

Area	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Great Dunmow	813	1,560	**2,373**
Saffron Walden	444	809	**1,253**
Stansted Mountfitchet	371	-	**371**
Takeley	446	54	**500**
Thaxted	115	-	**115**
Newport	81	60	**141**
Elsenham	248	205	**453**
Felsted	0	197	**197**
Great Chesterford	50	50	**100**
Other villages & small sites	410	20	**430**
Totals	**2,978**	**2,955**	**5,933**

The committed development and potential ULP sites that have been identified in the Uttlesford area and used in the study are shown in **Error! Reference source not found.**, with their relative size indicated by the symbol size.

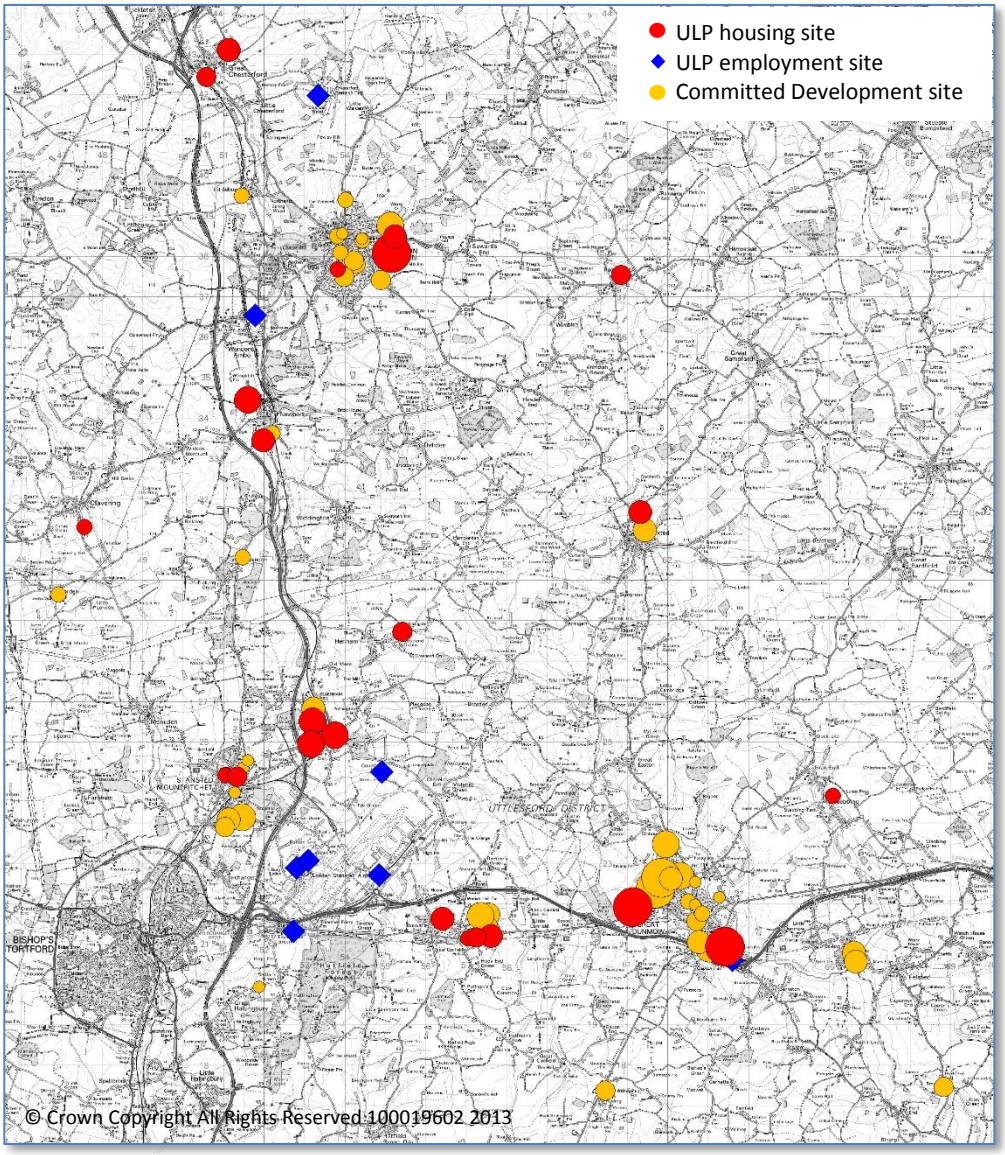


Figure 2-1: Committed and Potential ULP development sites in Uttlesford District up to 2026

2.2 ULP residential development in Uttlesford

Table 2-2 below shows the numbers of dwellings in each settlement arising only from the potential ULP developments provided by UDC.

Table 2-2: Dwelling numbers by settlement and future year

Area	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Great Dunmow	100	1030	**1130**
Saffron Walden	80	800	**880**
Stansted Mountfitchet	70	0	**70**
Takeley	160	0	**160**
Thaxted	60	0	**60**
Newport	70	60	**130**
Elsenham	195	205	**400**
Felsted	0	0	**0**
Great Chesterford	50	50	**100**
Other villages	94	0	**94**
Totals	**879**	**2,145**	**3,024**

The potential ULP sites for dwellings that have been identified in the Uttlesford area, and listed above, are illustrated separately in Figure 2-2.

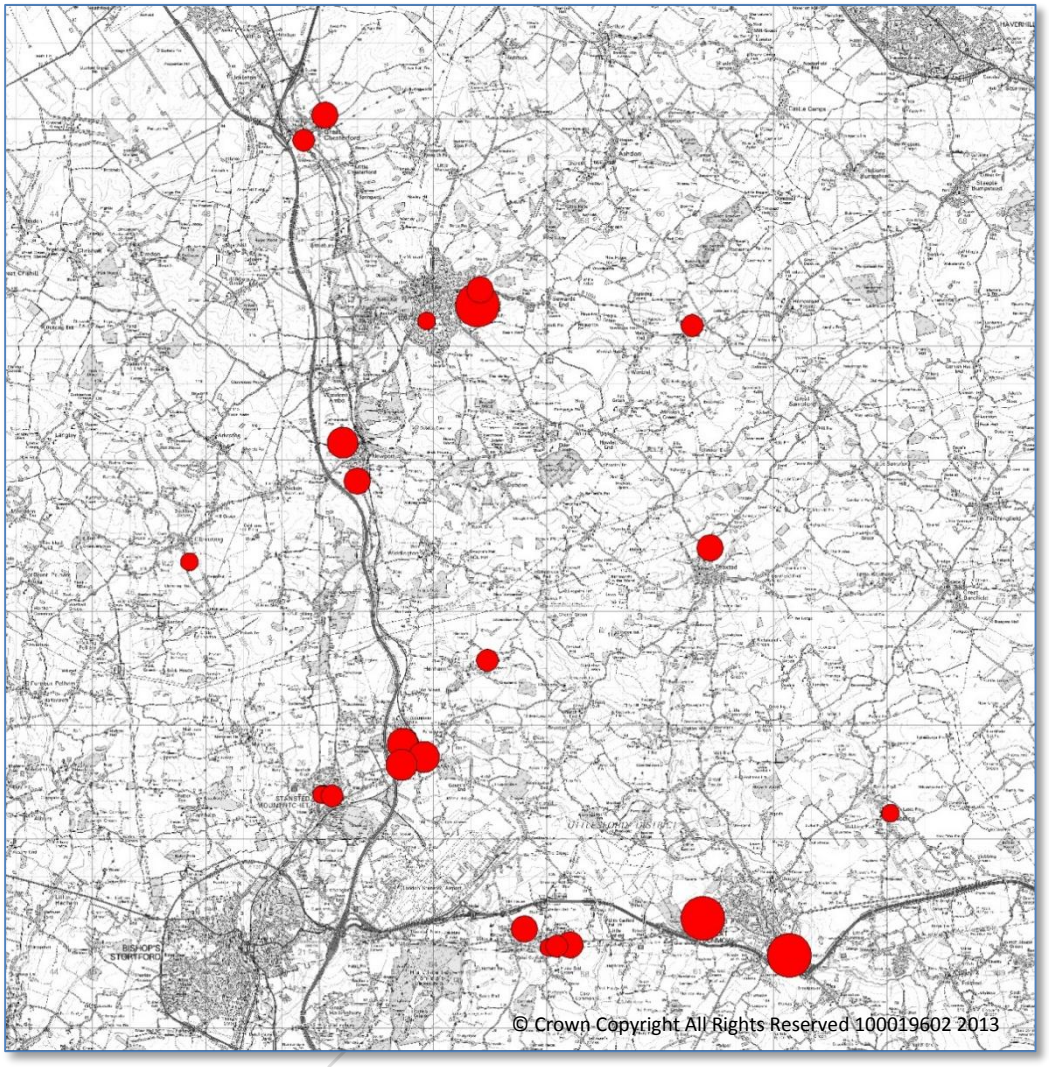


Figure 2-2: Potential ULP dwelling sites in Uttlesford District up to 2026

2.2.1 Saffron Walden ULP dwelling sites

The potential ULP dwelling sites identified in the Saffron Walden area are shown in **Figure 2-3** and their details shown in **Table 2-3**.

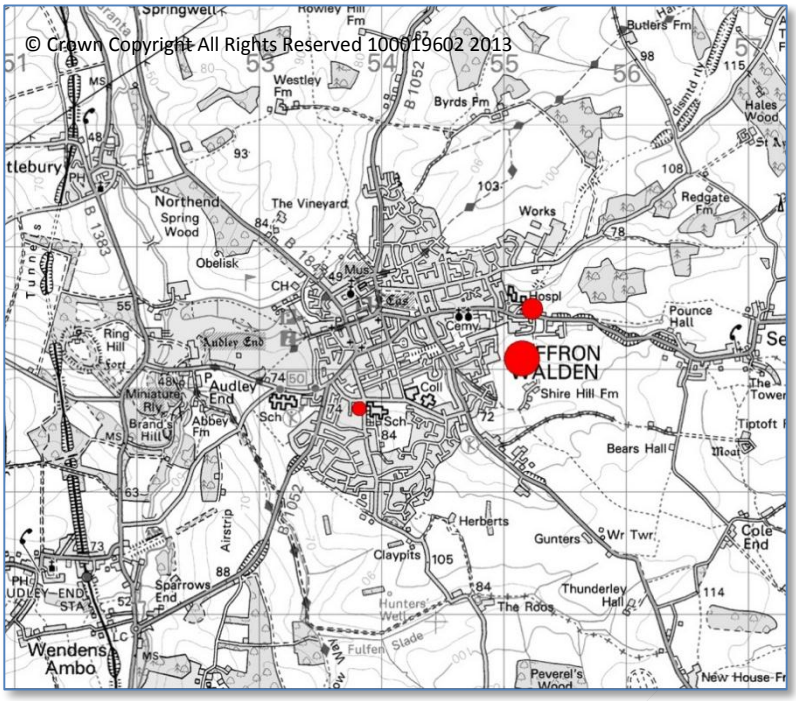


Figure 2-3: Potential ULP sites in Saffron Walden

Table 2-3: Saffron Walden ULP Housing Developments

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Saffron Walden 1: Land between Radwinter Road and Thaxted Road and land to the south of the Lord Butler Leisure Centre and west of Thaxted Road	0	800	**800**
Saffron Walden 2: Former Willis and Gambier Site, Radwinter Road	60	0	**60**
Saffron Walden 3: Land to the West of Debden Road	20	0	**20**

2.2.2 *Great Dunmow ULP dwelling sites*

The sites for dwellings that have been identified in Great Dunmow are shown in **Figure 2-4**, and detailed in Table 2-4.

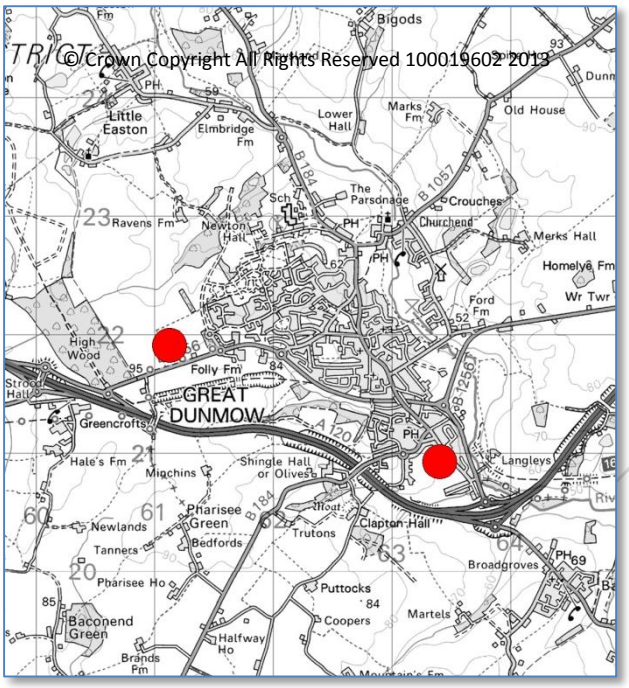


Figure 2-4: Potential ULP dwelling sites in Great Dunmow

Table 2-4: Great Dunmow ULP Housing Developments

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Great Dunmow 1: Land north of Stortford Road and west of Woodside Way, Great Dunmow	0	850	**850**
Great Dunmow 2 : Land west of Chelmsford Road	100	180	**280**

2.2.3 *Newport ULP dwelling sites*

The dwelling sites that have been identified in Newport are shown in **Figure 2-5** and detailed in Table 2-5.

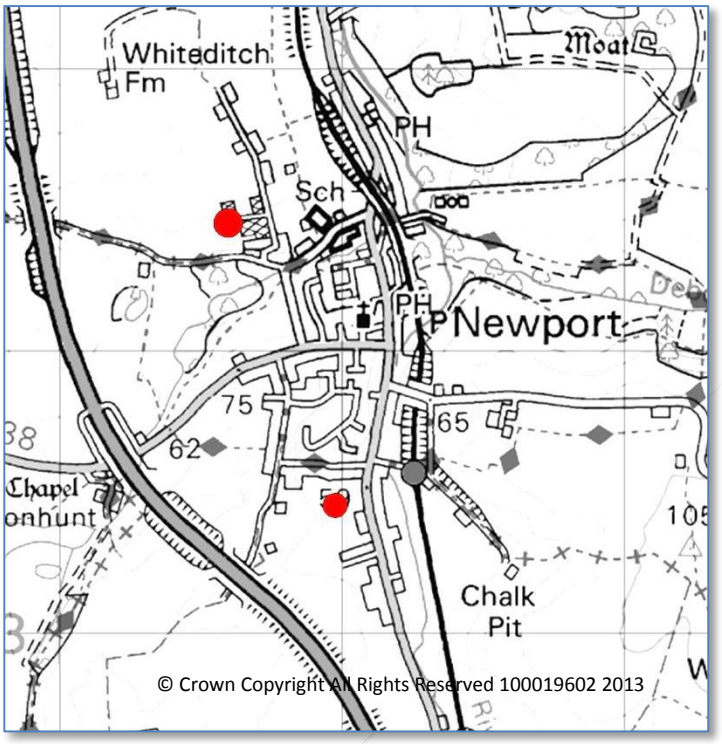


Figure 2-5: Potential ULP sites in Newport

Table 2-5: Newport ULP Housing Developments

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Newport 1: Bury Water Lane/Whiteditch Lane	0	60	**60**
Newport 2: Land west of London Road by Primary School	70	0	**70**

2.2.4 *Remaining ULP residential sites*

The remaining sites that have been identified for housing in other areas of the district are detailed below in **Table 2-6**.

Table 2-6: Other ULP Housing Developments

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Stansted 1: 14-28 Cambridge Road	11	0	**11**
Stansted 2: Land at 10 Cambridge Road	14	0	**14**
Stansted 3: St Mary's Primary School, St Johns Rd	45	0	**45**
Takeley 1: Land at and to the rear of Takeley Primary School	60	0	**60**
Takeley 3: North View and 3 Warren Close	55	0	**55**
Takeley 4: Land at Former Takeley Service Station and between Ridge House and Remarc	15	0	**15**
Takeley 5: Land to the south of the B1256 between Olivias and New Cambridge House	30	0	**30**
Thaxted 1: Sampford Road	60	0	**60**
Elsenham 1: Land west of Station Road (Planning permission granted June 2012 UTT/0142/12/OP)	155	0	**155**
Elsenham 2: Land west of Hall Road	40	75	**115**
Elsenham 3: Land south Stansted Road	0	130	**130**
Great Chesterford 1: New World Timber and Great Chesterford Nursery, London Road	20	20	**40**
Great Chesterford 2: Land south of Stanley Road	30	30	**60**
Clavering 1: Land to the rear of the shop and Oxleys Close	14	0	**14**
Henham 2: land north of Chickney Road and east of Lodge Cottages	30	0	**30**
Radwinter 1: Land north of Walden Road	40	0	**40**
Stebbing 1: Land to east of Parkside and Garden Fields	10	0	**10**

2.3 ULP employment sites in Uttlesford

The employment sites that have been identified throughout the district are shown below in **Figure 2-6**

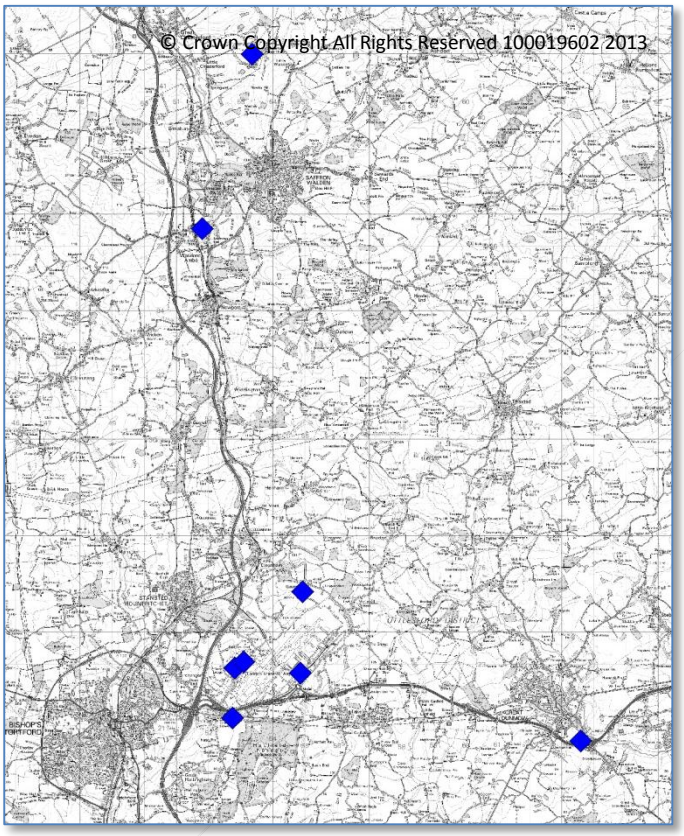


Figure 2-6: Potential ULP employment sites in Uttlesford

The details of these employment sites, together with other non-residential land uses proposed on other sites within Uttlesford, are tabulated in Table 2-7.

Table 2-7: ULP Employment site & Non-Residential Land Use Developments

Site Name & Location	Land Use	Gross Floor Area (m^2)		
		2012-2018	2019-2026	2012-2026
Saffron Walden: Land between Radwinter Rd & Thaxted Rd	Industrial warehousing	0	6ha	**6ha**
	Retail warehousing	0	4,500	**4,500**
	Primary school	0	210 pupil	**210 pupil**
Great Dunmow: Land north of Stortford Rd & west of Woodside Way	Primary school	0	210 pupil	**210 pupil**
Great Dunmow: Land west of Chelmsford Rd	Retail food store	0	2,322	**2,322**
	Primary school	0	210 pupil	**210 pupil**
	Warehousing	0	7,432	**7,432**
	Care home	0	130 residents	**130 residents**
Great Dunmow: Waste Transfer Centre	B1 office	1.7ha	0	**1.7ha (site area)**
Newport: Bury Water Ln	Care home	0	50 residents	**50 residents**
Elsenham: Gaunts End	B1a Office and Mixed Use	6,967	7,000	**13,967**
Chesterford Research Park	Business Park	6,000	18,000	**24,000**
Start Hill, Great Hallingbury, S of B1256	Business, Industry, Warehousing	2.2ha	0	**2.2ha (site area)**
Stansted Airport - Airport-related	Business, Industry, Warehousing	9,800	19,580	**29,380**
Stansted Mountfitchet,: land north east of Bury Lodge Lane	Offices	6,300	12,700	**19,000**
	Warehousing	12,300	24,700	**37,000**
Wendens Ambo, N of B1039, W of B1383	B1a office	900	0	**900**

2.4 Committed Developments

As previously stated UDC provided a list of developments which have been granted planning permission and which were therefore considered as committed. The sites associated with each study area are detailed in the next section. The committed developments take account of permissions up to and including that advised by UDC in October 2012.

2.4.1 Saffron Walden Committed Development sites

The committed housing development sites that have been identified in Saffron Walden are shown in **Figure 2-7** and detailed in **Table 2-8**.

Figure 2-7: Committed Development sites in Saffron Walden

Table 2-8: Saffron Walden Committed Developments: Dwellings

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Bell College South Road	37	0	**37**
McCarthy & Stone, South Road	27	0	**27**
Friends School	45	0	**45**
Friends School (RSL)	31	0	**31**
Lt Walden Road	15	0	**15**
8 Station Road	10	0	**10**
Ashdon Road	130	0	**130**
Paxtons Depot	12	0	**12**
Thaxted Rd (Kiln Court)	23	9	**32**
Former Gas Works Thaxted Rd	9	0	**9**
8-10 King Street	16	0	**16**
Emson Close	9	0	**9**

2.4.2 *Great Dunmow Committed Development sites*

The committed housing development sites that have been identified in Great Dunmow are shown in **Figure 2-8** and detailed in **Table 2-9**.

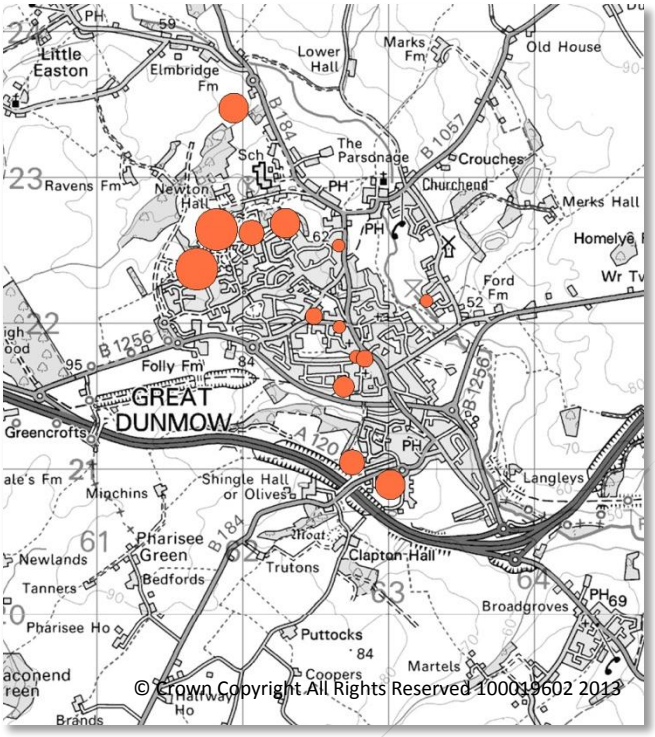


Figure 2-8: Committed Development sites in Great Dunmow

Table 2-9: Great Dunmow Committed Developments: Dwellings

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Riverside	5	0	**5**
Springfields	25	0	**25**
Woodlands Pk Sector 1 Emblems	50	55	**105**
Woodlands Pk Sector 2	120	232	**352**
Woodlands Pk Sector 3	120	233	**353**
Woodlands Pk Sector 3 RSL	61	0	**61**
Perkins Garage	12	0	**12**
Council Depot, High Street	0	10	**10**
Land Adj Holmans Yard	6	0	**6**
9 Stortford Road	6	0	**6**
Former Council Offices, 46 High Street	10	0	**10**
South of Ongar Road	100	0	**100**

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
North of Ongar Road	73	0	**73**
Woodlands Park Sector 4	125	0	**125**

2.4.3 *Newport Committed Housing Development sites*

The committed housing development sites that have been identified in Saffron Walden are shown in **Figure 2-9** and detailed in **Table 2-10**.

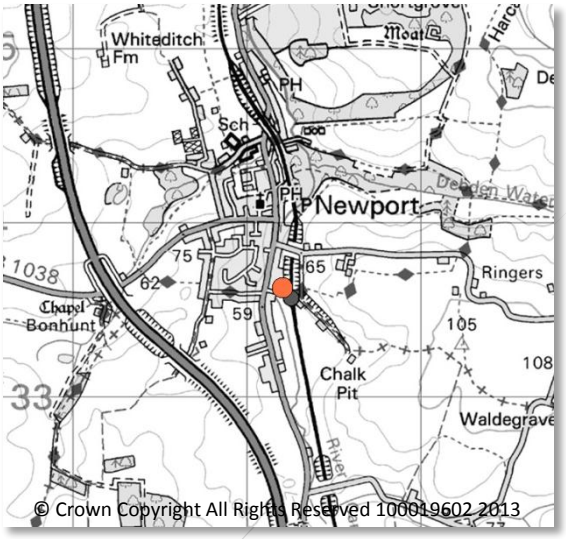


Figure 2-9: Committed Development sites in Newport

Table 2-10: Newport Committed Developments: Dwellings

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
The Maltings Station Rd	11	0	**11**

2.4.4 *Remaining UDC Committed Housing Development sites*

The committed development sites that have been identified in other areas of Uttlesford are shown in **Figure 2-10** and detailed in **Table 2-11**.

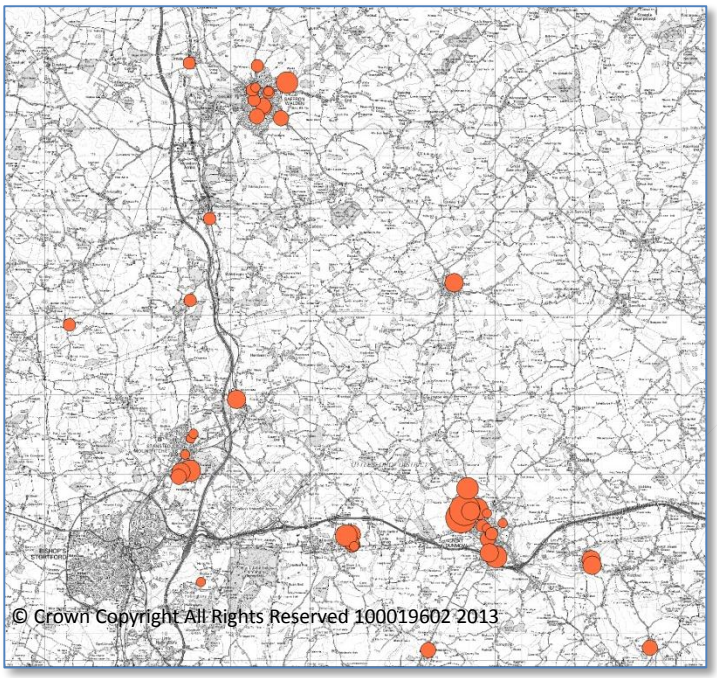


Figure 2-10: Committed Development sites in Uttlesford

Table 2-11: Other Uttlesford Committed Developments

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
S. Mountfitchet Almont House	7	0	**7**
S.Mountfitchet 8 Water Lane	8	0	**8**
S.Mountfitchet Rochford Nurseries	193	0	**193**
S.Mountfitchet Rochford RSL	54	0	**54**
S. Mountfitchet Rochford Nurseries (Former school site)	39	0	**39**
Takeley, Island Sites Priors Green	9	24	**33**
Takeley, Island Sites Priors Green	18	30	**48**
Takeley, Priors Green	178	0	**178**
Takeley, Priors Green RSL	74	0	**74**
Takeley, Takeley Nurseries	7	0	**7**

Site Name & Location	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Thaxted Wedow Road	55	0	**55**
Elsenham, The Orchard	53	0	**53**
Felsted/Little Dunmow, Flitch Green	0	68	**68**
Felsted/Little Dunmow, Flitch Green RSL	0	86	**86**
Felsted Hartford End Brewery	0	43	**43**
Great Easton	20	20	**40**
Gt Hallingbury, Newlands, Woodside Cottage & Oakside, Church Rd,	6	0	**6**
High Roding Meadow House Nursery	25	0	**25**
Littlebury Peggys Walk	14	0	**14**
Manuden, Site off the Street	14	0	**14**
Quendon, land r/o Foxley House	14	0	**14**
S.Mountfitchet Land at Mont House	4	0	**4**
Not included in modelling:			
Small sites(< 6 Units) with PP	223	0	**223**

2.4.5 *Stansted Airport Committed Development*

Stansted Airport has planning permission for 35 million passengers per annum (mppa). When permission was granted the airport was approaching its permitted capacity, 25mppa. However passenger growth peaked in 2007, at just under 24mppa, and it is currently operating at less than 18mppa. The new owners, Manchester Airports Group, are actively seeking growth, and now anticipate that Stansted will be operating at around 25mppa by 2018. For the purpose of this evaluation, it has been assumed that the airport will be operating at its full capacity within existing planning permission of 35mppa by 2026.

3 Key Study Areas

3.1 Initial Study Areas

It was clear that initial study areas would need to be established for Saffron Walden, Great Dunmow and Newport in order to determine where traffic flow information would be required. The initial study areas were derived in collaboration with UDC and ECC by looking at the locations of potential ULP sites and including identifying key highway links that were considered likely to be affected.

3.1.1 Saffron Walden

In Saffron Walden, the study area was developed with reference to the junctions that would need to be assessed, as shown in **Figure 3-1**.

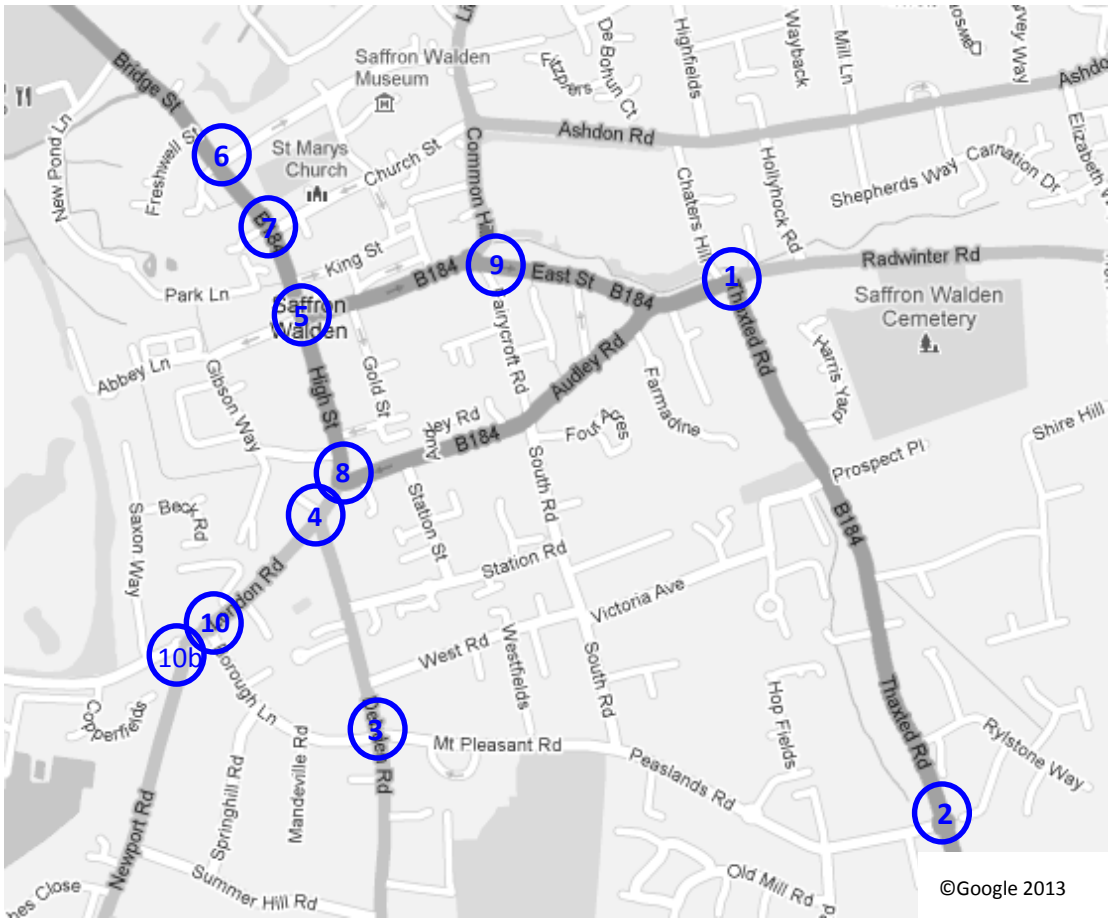


Figure 3-1: Study Area and Key Junctions for Saffron Walden

The junctions assessed are as follows:

1. B184 Thaxted Road / B1053 Radwinter Road signals
2. B184 Thaxted Road / Peaslands Road mini-roundabout
3. Mount Pleasant Road / Debden Road cross roads
4. B1052 London Road / Debden Road mini-roundabout
5. B184 High Street / B184 George Street signals
6. B184 High Street / Castle Street priority
7. B184 High Street / Church Street priority
8. B184 Audley Road / B184 High Street priority
9. B184 East Street / Fairycroft Road / Cates Corner priority
10. London Road / Borough Lane mini roundabout

(10b Newport Road / Audley End Road mini roundabout - added later in the study process)

A combination of available traffic data and specifically commissioned traffic surveys were used. The historic data was factored to 2012 levels using the traffic growth methodology which is described later in Section 4.

3.1.2 *Great Dunmow*

In Great Dunmow, the study area is as shown in **Figure 3-2** which also shows the key junctions to be evaluated.

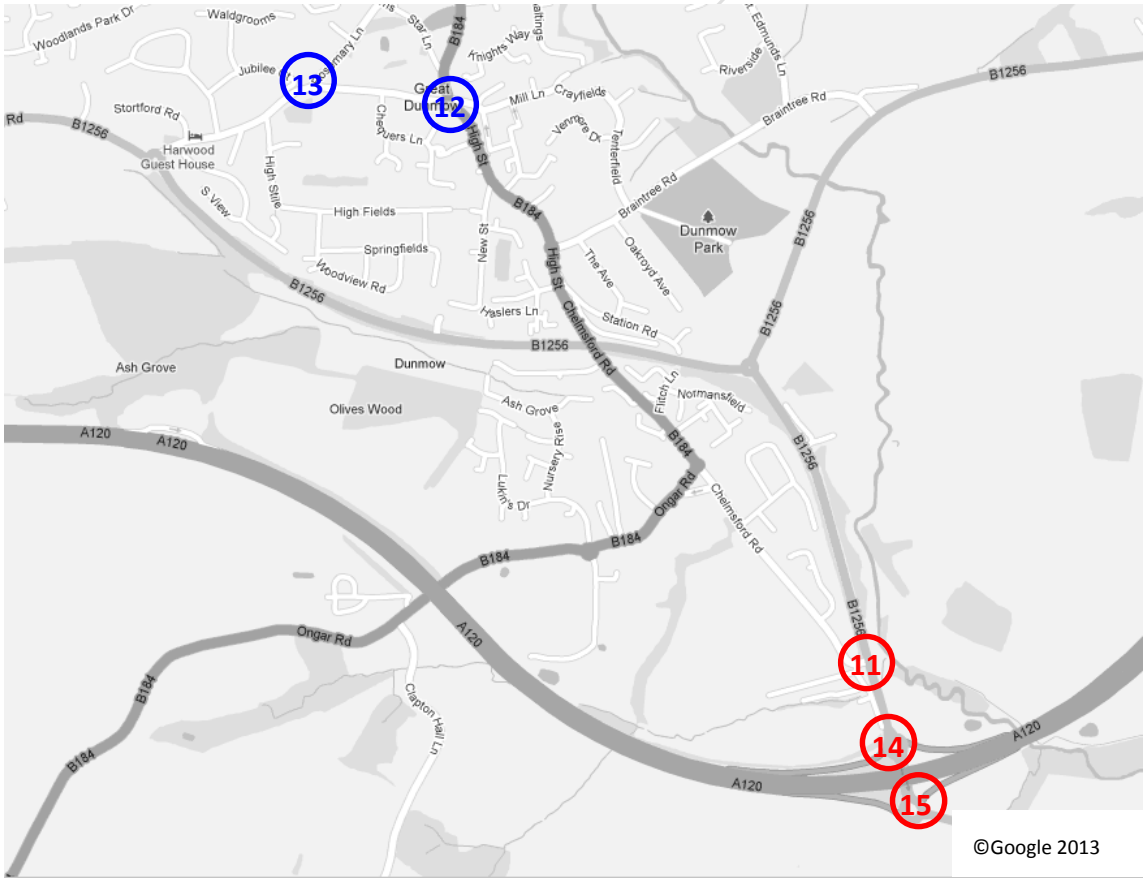


Figure 3-2: Study Area and Key Junctions for Great Dunmow

The junctions assessed are as follows:

11. B1256 / Chelmsford Road ("Hoblongs") priority
12. B184 High Street / Stortford Road / B184 Market Place priority
13. Stortford Road / Rosemary Lane mini roundabout
14. A120 / B1256 Interchange roundabout
15. A120 / B1008 Interchange roundabout

Existing traffic data from June 2010 was available of Junctions 11, 14 and 15, shown in red in **Figure 3-2**, so additional data collection was not required at these locations. This existing data was factored to 2012 levels using the traffic growth methodology described in Section 4.

3.1.3 Newport

In Newport, the analysis comprised the three junctions as illustrated in **Figure 3-3**.

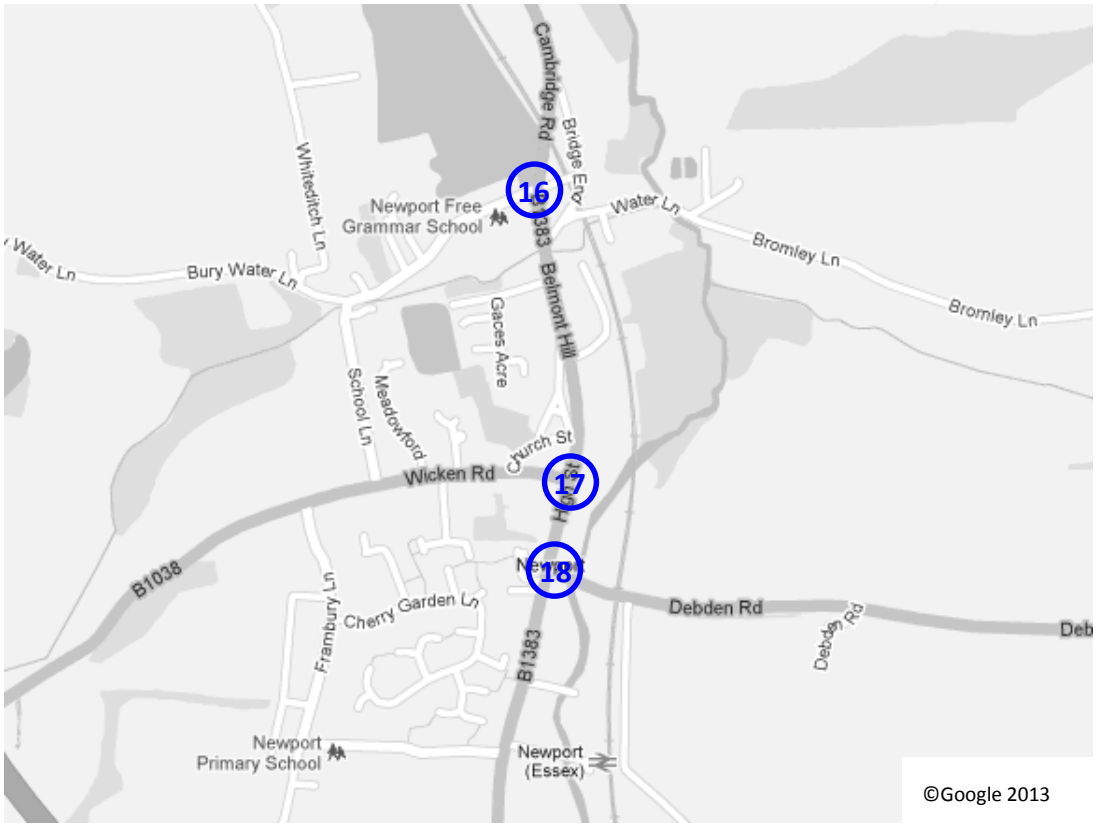


Figure 3-3: Study Area and Key Junctions for Newport

The junctions assessed, all priority junctions, are:

16. B1383 Cambridge Road / Bury Water Lane
17. B1383 High Street / Wicken Road
18. B1383 High Street / Debden Road

3.1.4 *Uttlesford District area*

The traffic impact of the ULP as a whole on the strategic road network, with particular reference to the A120 and M11, has also been assessed. This has focussed on Junction 8 of the M11, which is a signal controlled, roundabout.

3.1.5 *Data for Saffron Walden Air Quality Assessment*

As part of the ULP work, traffic data was also collected to update the 2010 Air Quality Modelling work. The sites for which additional information was required were:

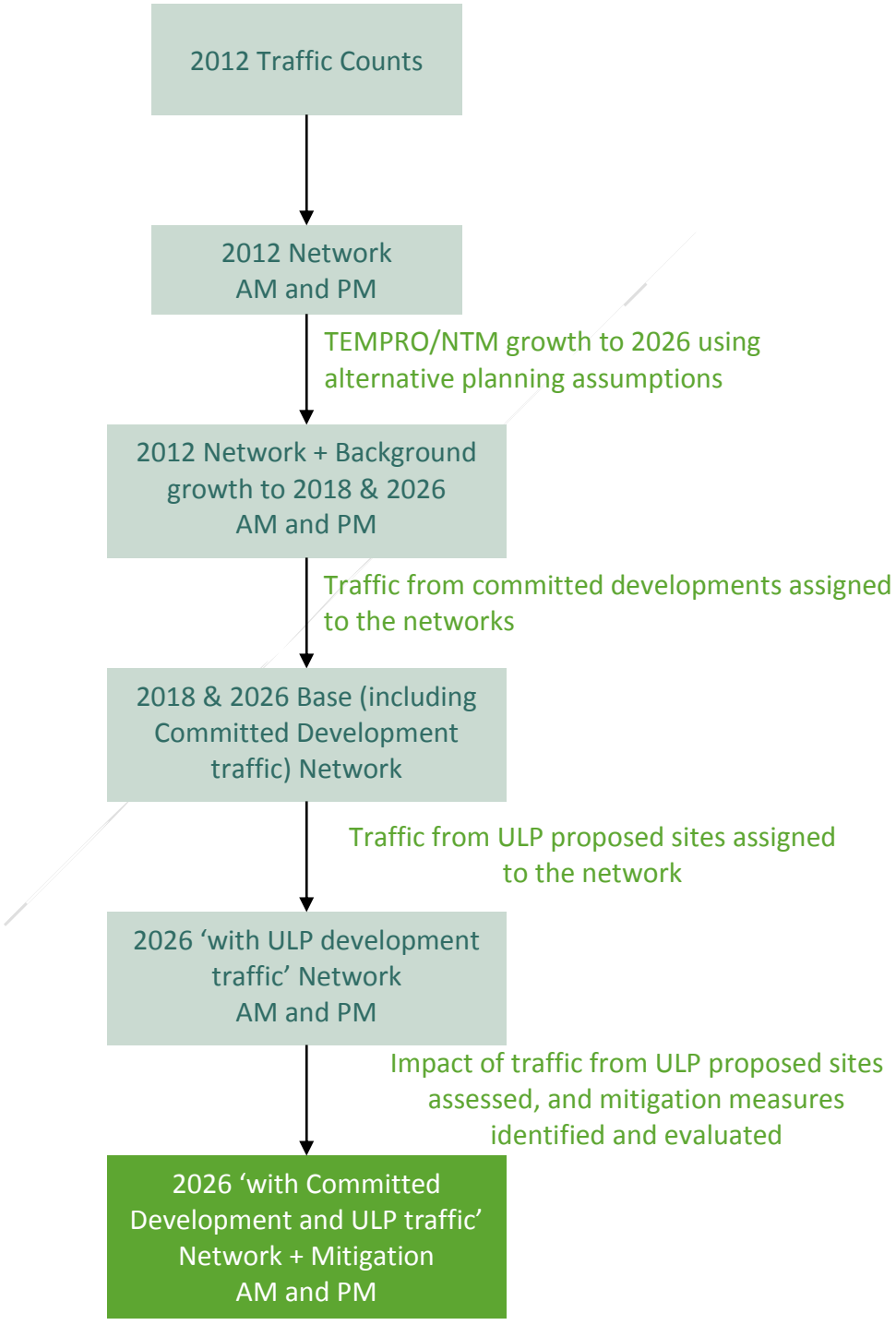
1. B184 Thaxted Road / B1053 Radwinter Road
4. B1052 London Road / Debden Road mini-roundabout
5. B184 High Street / B184 George Street
6. B184 High Street / Castle Street

At these junctions Automatic Traffic Counts (ATCs) and peak period Queue Length surveys were undertaken on all approach arms.

4 Forecast Traffic Flows

4.1 Methodology

An overview of the methodology used to build a network of traffic flows for all future scenarios is set out in the flowchart below. Subsequent sections give a more detailed explanation of each of these steps.



4.2 Base Network

Manual classified turning count traffic flows at each identified junction in the study areas were obtained from surveys undertaken by Essex Highways on Wednesday 12th September 2012 between the hours of 07:00 and 10:00 and 15:30 and 18:30.

Excel spreadsheets for the 2012 AM and PM peak periods (08:00-09:00 and 17:00-18:00) and showing the study area road networks for Saffron Walden, Great Dunmow, Newport and for Uttlesford as a whole, were set up. The turning movements at each of the surveyed junctions were then displayed on this network as shown in the example screenshots in **Figure 4-1** to **Figure 4-4** below. All of these network diagrams are included in the appendices, with Appendix B containing the 2012 base network flows.

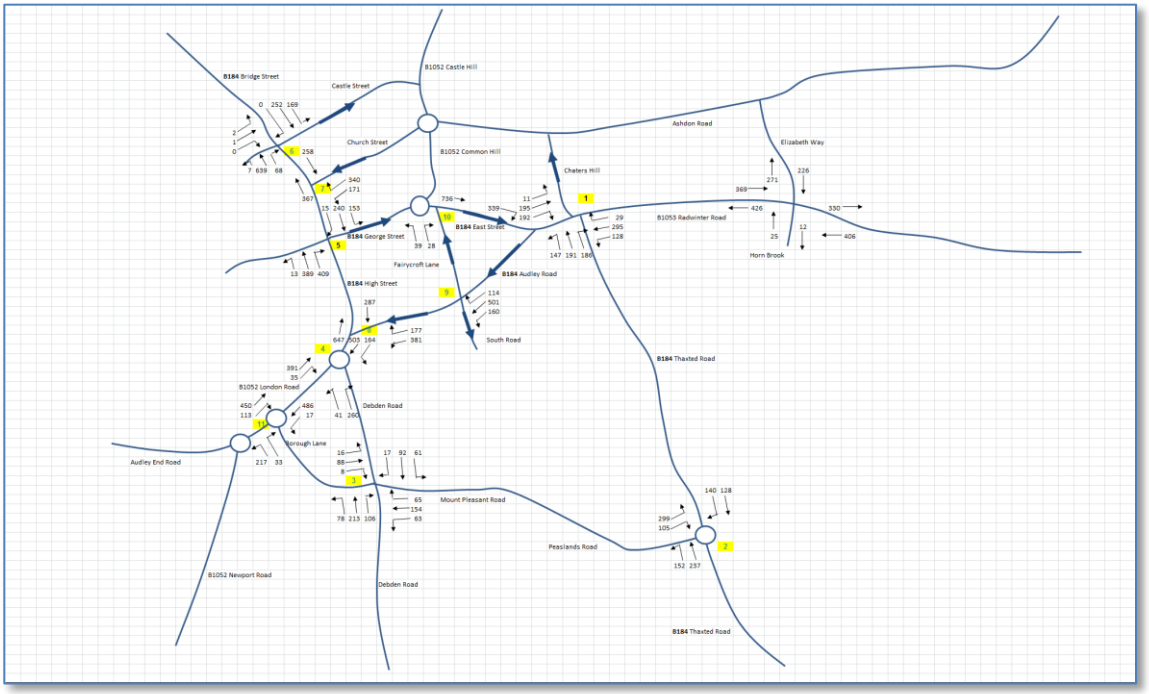


Figure 4-1: Study Area and Key Junctions for Saffron Walden in Spreadsheet Model

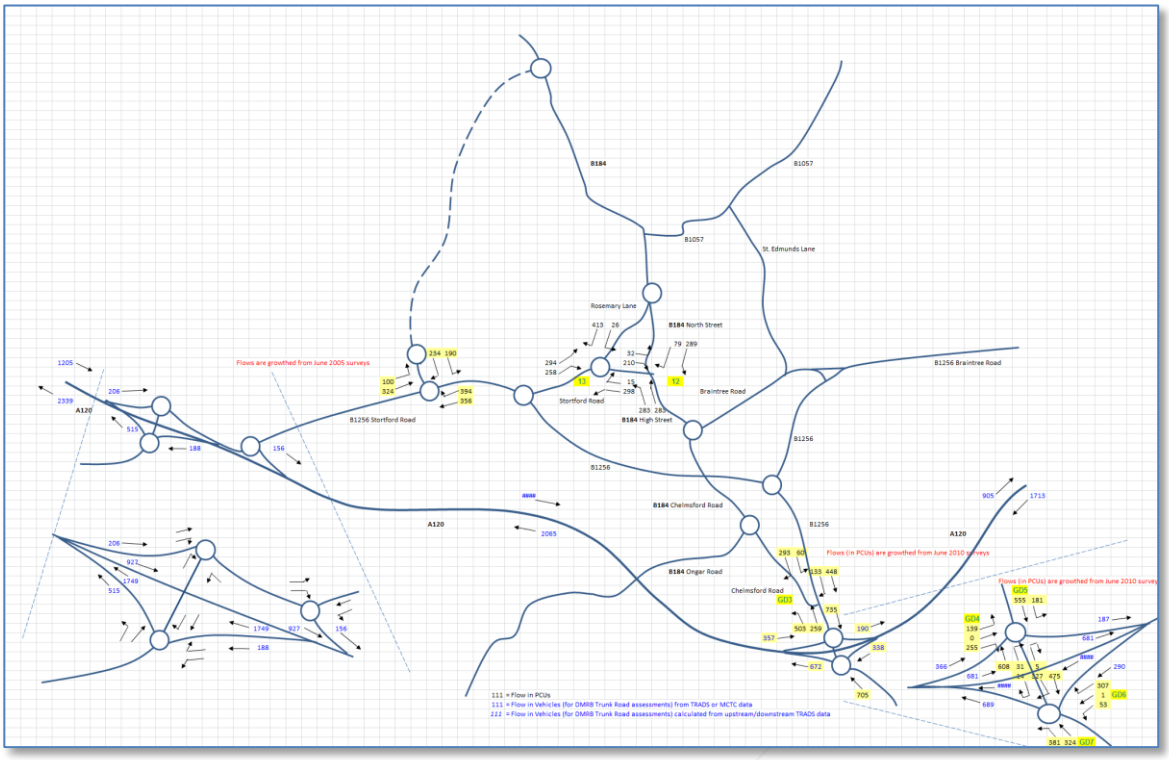
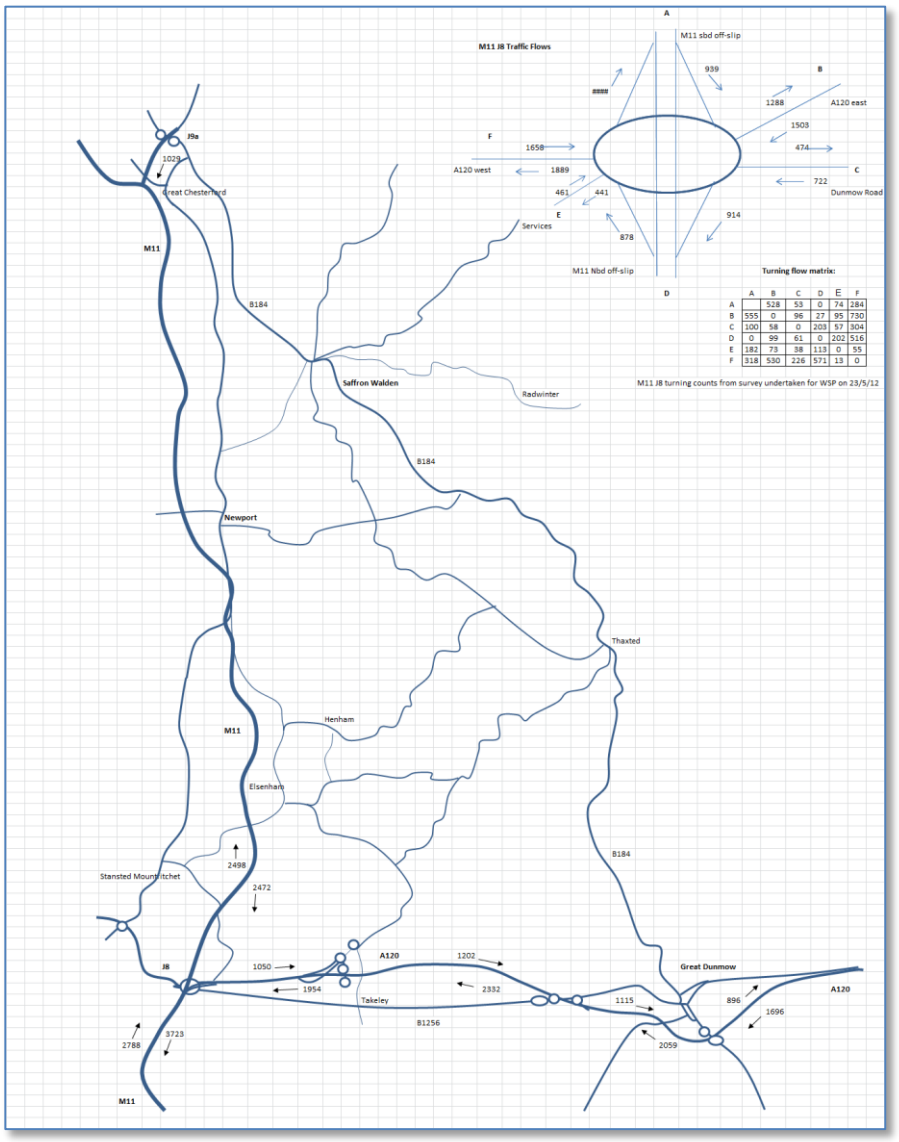


Figure 4-2: Study Area and Key Junctions for Great Dunmow in Spreadsheet Model

Figure 4-3: Study Area and Key Junctions for Newport in Spreadsheet Model



	A	B	C	D	E	F
A		528	53	0	74	284
B	555	0	96	27	95	730
C	100	58	0	203	57	304
D	0	99	61	0	202	516
E	182	73	38	113	0	55
F	318	530	226	571	13	0

Figure 4-4: Strategic network study area for Uttlesford District in Spreadsheet Model

4.3 Future Assessment Years & Background Traffic Growth

In order to determine the future year background network flows, future assessment years of 2018 and 2026 have been agreed with UDC and ECC as milestone years. Background traffic growth for 2012 to these future years has been calculated using TEMPRO growth - with alternative planning assumptions included, and using the development information supplied by UDC. This ensures that no double-counting takes place when the traffic from the ULP and committed developments is subsequently added to the network.

Within the key study areas of Saffron Walden, Great Dunmow and Newport, only the adjusted TEMPRO growth has been applied, ie no background traffic growth using the National Transport Model (NTM) was applied. This was because it was considered that the degree of growth from the committed and proposed ULP developments was sufficient to represent background growth in these specific areas, as these settlements are already constrained by their local road networks.

For the strategic road network the NTM TEMPRO growth option was utilised in addition to the alternative planning assumptions, as these flows would be influenced by external trips.

The growth rates derived from these processes are summarised below in Table 4-1, and set out in more detail in Appendix C.

Table 4-1: Growth factors calculated by area for 2012-2018 and 2012-2026

Area	Traffic Growth Period			
	2012-2018		2012-2026	
	AM	PM	AM	PM
TEMPRO calculated values				
Saffron Walden	1.038	1.055	1.069	1.113
Great Dunmow	1.036	1.059	1.065	1.119
Uttlesford	1.035	1.055	1.062	1.112
TEMPRO & NTM calculated values				
M11 & Services (Motorway)	1.005	1.008	1.085	1.095
A120 east of J8 (Trunk Road)	1.012	1.015	1.102	1.114
A120 west of J8 (Principal Dual)	1.003	1.006	1.068	1.077
Dunmow Road (Local Route)	1.003	1.008	1.070	1.079

4.4 Forecast Traffic Flows

Following the development of the 2012 base spreadsheet networks, these background traffic flows have been factored to the future assessment years of 2018 and 2026 to produce the future year network flows.

The trips expected to be generated by the committed developments and potential ULP sites have then been assigned using the methodology described above, to establish the forecast traffic flows. The scenarios tested for each key town are described in the following sections.

4.4.1 Scenarios

The individual scenarios that have been assessed initially for Saffron Walden, Newport and the wider Uttlesford area are detailed below, and the subsequent 2018 flow diagrams are included in Appendix while those for the 2026 scenarios are included in Appendix F.

- 2018 Base + Committed Dev
- 2018 Base + Committed Dev + ULP Dev
- 2026 Base + Committed Dev
- 2026 Base + Committed Dev + ULP Dev

The analysis of Great Dunmow has been done on the assumption that western bypass will be in place, on the advice of officers from UDC. The scenarios evaluated for Great Dunmow are therefore:

- 2018 Base + Committed Dev with Bypass
- 2018 Base + Committed Dev + ULP Dev with Bypass
- 2026 Base + Committed Dev with Bypass
- 2026 Base + Committed Dev + ULP Dev with Bypass

The analysis of the strategic network, focussed on M11 junction 8, has been undertaken for the following scenarios:

- 2018 Base + Committed Dev + G1
- 2018 Base + Committed Dev + G1 + ULP Dev
- 2026 Base + Committed Dev + G1
- 2026 Base + Committed Dev + G1 + ULP Dev

5 Development Trip Generation & Assignment

5.1 Trip Rates

In order to determine the number of vehicle trips that are expected to be generated by the committed and ULP development sites in each peak period, the TRICS database was interrogated using specific parameters relevant to the development sites to ensure that representative trip rates were identified.

Average vehicle trip rates were extracted from TRICS, rather than 85th%ile values, as the sites chosen for development are generally within the vicinity of locations with a good level of services, eg schools, shops and public transport etc. It has also been assumed that any future development would be expected to provide a comprehensive package of sustainable transport measures, such as new or improved public transport services and facilities, connections to the local pedestrian and cycle networks, and detailed travel plans to encourage the use of non-car modes of travel. A summary of the trip rates used in the analysis is shown in Table 5-1.

Table 5-1: Summary of Average Vehicle Trip Generation Rates by Land Use

Land Use	AM Peak		PM Peak	
	ARR	DEP	ARR	DEP
Housing Trip Rates				
Houses Privately owned	0.156	0.406	0.376	0.227
Houses Rented	0.128	0.245	0.295	0.179
Flats Privately owned	0.048	0.193	0.166	0.068
Flats Rented	0.060	0.091	0.081	0.080
Other Development Type Trip Rates				
Education – Primary School (per pupil)	0.23	0.157	0.009	0.021
Retail – Food Superstore (per 100m²)	5.434	3.821	9.727	9.990
Employment – Office (per 100m²)	2.173	0.325	0.430	2.550
Employment - Warehousing (per 100m²)	0.470	0.156	0.128	0.356
Employment – Industrial Units (per Ha)	13.510	3.179	1.766	11.626
Employment – Industrial Estate (per Ha)	18.561	9.003	4.424	14.837
Employment – Business Park (per 100m²)	1.297	0.249	0.193	1.094
Health – Care Home (per bed)	0.081	0.069	0.05	0.077

5.1.1 Housing Trip Generation: ULP

A number of assumptions were made in agreement with UDC in order to arrive at a likely breakdown of the household numbers proposed within each scenario. These related to whether the dwelling would be a flat or a house, whether the development is private or rented and whether the development is a large edge of town or small in town site. The assumptions made are as follows:

- Large edge of town sites: 70% houses/30% flats

- In town sites: 50% houses/50% flats

We have only included sites with 5 or more houses within the modelling process as any sites smaller than this would be likely to produce a negligible number of trips.

Uttlesford Policy HO5 states that developments on sites of 15 dwellings or more will be required to provide 40% of the total number of dwellings as affordable dwellings on site, whereas those of between 5 and 14 dwellings will be required to provide 20% of the total number of dwellings as affordable dwellings on site.

As part of the trip generation calculation process and for the purposes of this study, we have assumed that 50% of the affordable housing would be shared equity and 50% rented accommodation. Following Uttlesford Policy HO5, this results in 80% of the overall number of dwellings on sites of 15 or more units being allocated as shared equity and 20% rented, and 90% number of dwellings on sites of between 5 and 14 units being allocated as shared equity and 10% rented.

For instances where a large development site contained retail and primary school land uses as well as housing, we assumed that 10% of trips to the retail unit and 100% of trips to the primary school would be from the housing units contained on site, and thus removed them from our assessment.

A breakdown, by housing type, of the potential number of ULP dwellings in Saffron Walden, in both 2018 and 2026, is shown in Table 5-2 below.

Table 5-2: Breakdown of Saffron Walden ULP Residential Developments by Housing Type

Type of housing	Number of Dwellings	
	2018 ULP Development	2026 ULP Development
Houses Privately owned	42	448
Houses Rented	10	112
Flats Privately owned	22	192
Flats Rented	6	48

The vehicle trip generation rates shown in Table 5-1 have then been applied to the number of ULP dwellings for Saffron Walden, and the results shown in Table 5-3.

Table 5-3: Summary of Saffron Walden ULP Residential Generated Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Houses Privately owned	7	18	17	10	70	182	168	102
Houses Rented	1	3	3	2	14	27	33	20
Flats Privately owned	1	4	3	1	9	37	32	13
Flats Rented	0	0	0	0	3	4	4	4

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Total	**9**	**25**	**23**	**13**	**96**	**251**	**237**	**139**

The same process was undertaken for each key town and the numbers of dwellings and resultant trips for Great Dunmow are shown below in Table 5-4 and Table 5-5.

Table 5-4: Breakdown of Great Dunmow ULP Residential Developments by Housing Type

Type of housing	Number of Dwellings	
	2018 ULP Development	2026 ULP Development
Houses Privately owned	56	577
Houses Rented	14	144
Flats Privately owned	24	247
Flats Rented	6	62

Table 5-5 Summary of Great Dunmow ULP Residential Generated Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Houses Privately owned	9	23	21	13	90	234	217	131
Houses Rented	2	3	4	3	18	35	43	26
Flats Privately owned	1	5	4	2	12	48	41	17
Flats Rented	0	1	0	0	4	6	5	5
Total	**12**	**31**	**30**	**17**	**124**	**323**	**305**	**178**

The potential dwellings and resultant trips for Newport developments are shown in Table 5-6 and Table 5-7 respectively.

Table 5-6: Breakdown of Newport ULP Residential Developments by Housing Type

Type of housing	Number of Dwellings	
	2018 ULP Development	2026 ULP Development
Houses Privately owned	39	34
Houses Rented	10	8
Flats Privately owned	17	14
Flats Rented	4	4

Table 5-7: Summary of Newport ULP Residential Generated Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Houses Privately owned	6	16	15	9	5	14	13	8
Houses Rented	1	2	3	2	1	2	2	2
Flats Privately owned	1	3	3	1	1	3	2	1
Flats Rented	0	0	0	0	0	0	0	0
Total	**8**	**21**	**21**	**12**	**7**	**19**	**17**	**11**

The potential dwellings and resultant trips for the remaining wider area ULP developments are shown in Table 5-8 and Table 5-9 respectively.

Table 5-8: Breakdown of Wider Area ULP Residential Developments by Housing Type

Type of housing	Number of Dwellings	
	2018 ULP Development	2026 ULP Development
Houses Privately owned	356	143
Houses Rented	85	36
Flats Privately owned	152	61
Flats Rented	36	15

Table 5-9: Summary of Wider Area ULP Residential Generated Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Houses Privately owned	55	144	134	81	22	58	54	32
Houses Rented	11	21	25	15	5	9	11	6
Flats Privately owned	7	29	25	10	3	12	10	4
Flats Rented	2	3	3	3	1	1	1	1
Total	**75**	**197**	**187**	**109**	**31**	**80**	**76**	**43**

The information on the ULP proposals as set out in the preceding tables has been summarised Table 5-10 and Table 5-11 to provide an overall indication of the total number of dwellings by housing type, as well as the total generated trips associated with the Local Plan.

Table 5-10: Breakdown of Total ULP Residential Developments by Housing Type

Type of housing	Number of Dwellings	
	2018 ULP Development	2026 ULP Development
Houses Privately owned	492	1201
Houses Rented	119	300
Flats Privately owned	216	515
Flats Rented	52	129

Table 5-11: Summary of Total ULP Residential Generated Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Houses Privately owned	77	201	186	113	219	462	452	273
Houses Rented	15	29	35	21	44	71	89	54
Flats Privately owned	10	41	35	14	32	92	85	35
Flats Rented	3	5	4	4	8	12	10	10
Total	**106**	**276**	**261**	**152**	**303**	**637**	**636**	**372**

5.1.2 *Other Land Use Trip Generation: ULP*

The estimated total trips arising from the potential employment sites and other non-residential land uses in the UDC area are shown in **Table 5-12**, which have been calculated from the trip rates shown in **Table 5-1** and the site information shown in Table 2-7.

Table 5-12: Summary of ULP Employment sites' attracted Vehicle Trips

ULP Site	2018 ULP Development				2026 ULP Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Saffron Walden: Land between Radwinter Rd & Thaxted Rd	0	0	0	0	78	32	51	91
Great Dunmow: Land west of Chelmsford Rd	0	0	0	0	96	44	114	132
Great Dunmow: Waste Transfer Centre	3	3	3	3	0	0	0	0
Newport: Bury Water Ln	0	0	0	0	4	3	3	4
Elsenham 4: Land at Gaunts End	147	32	66	178	147	32	66	178
Chesterford Research Park	91	16	15	87	273	48	45	262
Start Hill, Land south of B1256	77	15	16	82	0	0	0	0
Stansted Airport 1: Airport related employment	50	9	8	42	100	83	15	84
Stansted : Land north east of Bury Lodge Lane	195	40	43	204	392	315	86	412
Wendens Ambo, N of B1039, W of B1383	20	3	4	23	0	0	0	0
Total	**582**	**118**	**154**	**620**	**1089**	**557**	**381**	**1163**

5.1.3 *Development Trip Generation: Committed*

The estimated total trips arising from the committed sites in the UDC area are shown below in **Table 5-13**, which have been calculated from the trips rates shown in **Table 5-1** and the site information shown in **Table 2-8**, **Table 2-9**, **Table 2-10** and Table 2-11.

For Stansted Airport, while the G1 employment trips are included in TEMPRO, passenger trips are not. The passenger traffic associated with the G1 Stansted Airport development, as shown in **Table 5-13**, has therefore been extracted from the G1 documents: Environmental Statement Vol 16 Air Traffic Data, April 2006, and Vol 11 Addendum Update, Surface Access Transport Assessment, July 2007. This has utilised predicted passenger hourly flow profiles, mode share and vehicle occupancy. As previously stated, passenger levels in 2012 were less than 18mppa.

For the purposes of this assessment it has been assumed that the airport operated at 17.5mppa in 2012, and will be operating at 25mppa in 2018, and at 35mppa in 2026. The 10mppa level has been calculated by subtracting the G1 35mppa profiles from the 25mppa profiles, and these values have been factored for the 7.5mppa level. For 2018, therefore, an additional 7.5mppa would be expected to be on the network, and in 2026 a further 10mppa, and these are the trips set out in the table.

Table 5-13: Summary of Committed development Vehicle Trips

Committed Development Site	2018 Committed Development				2026 Committed Development			
	AM Peak		PM Peak		AM Peak		PM Peak	
	ARR	DEP	ARR	DEP	ARR	DEP	ARR	DEP
Saffron Walden	42	112	106	61	1	3	3	2
Great Dunmow	85	221	209	122	64	167	157	92
Newport	1	3	3	2	0	0	0	0
Other areas	86	235	220	114	33	96	82	50
Stansted Airport px	55	227	3	72	74	302	4	97
Total	**269**	**798**	**541**	**371**	**172**	**568**	**246**	**241**

5.2 Distribution & Assignment of Future Development Trips

5.2.1 *Distribution*

The car driver element of the 2001 Census journey to work data has been used to establish the likely distribution of the vehicle trips generated by the potential ULP sites, using comparable wards in Saffron Walden, Great Dunmow and Newport and the other relevant areas in Uttlesford.

As the majority of peak period trips for the ULP sites will be residents going to work, the distribution of departures has been based on the 2001 Census Journey to Work data for comparable nearby zones. The Journey to Work data provides the outbound part of the journey, in the AM period, and this has been reversed for the PM part of the journey, and vice versa. Journeys within the same zone have not been assigned to the network.

See Appendix D for plans of the zoning system used.

An adjustment has been made to reduce the double counting which may occur in relation to trips from new residential sites and trips to the major new employment sites at Little Chesterford Park, Elsenham and the land east of Stansted Mountfitchet. This has involved removing the trips from the residential areas which are headed or originating from the major employment sites, a process found to remove only a small number of trips from the network.

For Stansted Airport passenger trips, these have been distributed accordingly to the passenger origin information set out in the G1 application documents.

5.2.2 Assignment

The most likely routes between the zones within each study area were identified using professional judgement, mainly by the shortest apparent distance on the road network, taking into account existing highway restrictions. The generated trips for each development site in turn were then assigned and distributed onto the network using the distribution described above.

6 Assessment Methodology

Each junction within the agreed key study areas has been assessed under the full range of relevant scenarios in order to evaluate the likely impact of the proposed sites.

6.1 Junction Analysis Methodology

Junctions have been assessed using standard industry software as follows:

- Roundabouts and priority junctions – Junctions8;
- Signalised junctions - LinSig

Geometric parameters have been taken from existing analysis files (where available) or have been measured off from appropriate mapping.

In the case of ARCADY assessments, the performance and operation of a junction is given by the Ratio of Flow to Capacity (RFC) for each approach. Generally, where the RFC is shown to be greater than 1.0 then that approach arm is said to have reached its theoretical capacity as the number of vehicles arriving at the junction on that arm exceeds its capacity. Any approach with an RFC above 1.0 would be expected to suffer from significant vehicle queues and delays.

However, for existing junctions, as a rule of thumb, an RFC between 0.85 and 1.0 is usually taken as a point where an approach has reached its practical capacity and where vehicles will start to experience some delay and congestion. For LinSig, the threshold value is usually considered to be 90%.

The output files from all of the junction capacity assessments have been provided on the disc appended to the end of this report, and the analysis results are summarised in Appendix G.

More detail is given of the junction analysis methodology and outputs in the Technical Note included at Appendix H.

7 Impact of Potential ULP Sites in Saffron Walden

The impact of traffic from the proposed ULP sites on the main highway links in Saffron Walden has been assessed in terms of the anticipated effect on the operation of each junction. The junction capacity analysis is discussed in more detail in the Technical Note, contained in Appendix H. This section summarises the findings from the initial analysis, with no network changes, and then sets out the improvements which would be likely to be needed to mitigate development impacts, and the subsequent status of the junctions in capacity terms.

7.1 Junction Impacts

Table 7-1 summarises the capacity status of each of the key junctions under the various future scenarios for Saffron Walden, showing the worst situation in either of the peak hours. For simplicity the analysis results have been categorised to give a broad indication of the situation in each scenario. These categories are:

0 No capacity issues in either peak hour (values shown in black)
1 One or more arms approaching capacity in either of the peak hours (values shown in orange)
2 One or more arms at or exceeding capacity in either of the peak hours (values shown in red)

Table 7-1: Summary of Saffron Walden Junction Capacity Status

		2012	2018		2026	
	Junction	Base	Committed	Committed + ULP	Committed	Committed + ULP
1	B185 Thaxted Rd / B1053 Radwinter Rd	0	1	1	2	2
2	B184 Thaxted Rd / Peaslands Rd	0	0	0	1	2
3	Mount Pleasant Rd / Debden Rd	0	0	0	0	1
4	B1052 London Rd / Debden Rd	0	1	1	2	2
5	B184 High St / B184 George St	0	1	1	2	2
6	B184 High St / Castle St	0	0	0	0	0
7	B184 High St / Church St	2	2	2	2	2
8	B184 Audley Rd / B184 High St	1	1	1	2	2
9	B184 East St / Fairycroft Rd / Cates Cnr	0	0	0	0	0
10	B1052 London Rd / Borough Ln	0	0	0	1	1
10b	B1052 Newport Rd / Audley End Rd	1	2	2	2	2

In addition to the capacity overview contained in **Table 7-1**, **Figure 7-1** and **Figure 7-2** highlight the locations of those junctions at which there are likely to be capacity problems in 2026, with each peak hour shown separately. Orange indicates that the junction is near capacity (between 0.85 and 1.0 RFC), and some queuing will occur; red indicates that the junction is over capacity (over 1.0 RFC) and there is likely to be significant queuing.

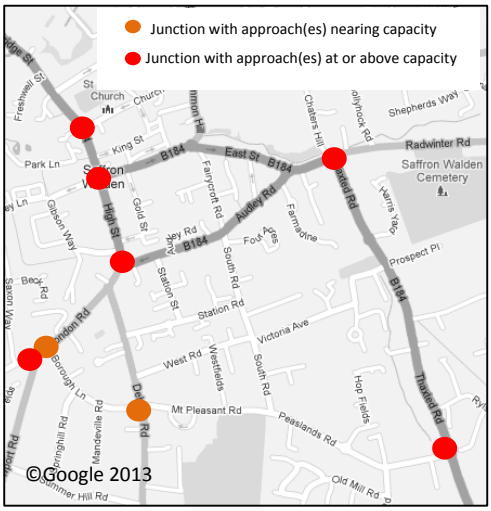


Figure 7-1: 2026 Base + ULP AM Network Operation

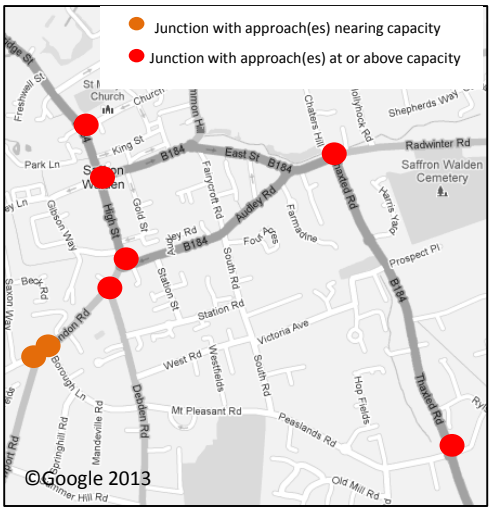


Figure 7-2: 2026 Base + ULP PM Network Operation

It is evident that some junctions are shown to be approaching capacity in 2018 with committed development in place. In 2026 this situation is exacerbated, and the addition of ULP development indicates that mitigation measures are needed in order to minimise the developments' impact on the town's road network. The next section details the mitigation measures which have been identified and evaluated to facilitate the ULP development within Saffron Walden.

7.2 Saffron Walden Infrastructure Change – Link road to east of town

One of the planning criteria for the implementation of Saffron Walden Policy 1 is to provide for a link road between Thaxted Road and Radwinter Road. Given that development information provided by UDC indicates that the majority of the housing on this site is not likely to be built until after 2020/21, for the purposes of the ULP assessment, the link road is not assumed to be in place until 2026.

The eastern link road, which would connect Thaxted Road with Radwinter Road, would be expected to relieve the Thaxted Road/Radwinter Road junction, which is a recognised bottleneck on the network. The link road would be enabled through ULP development on the Saffron Walden Policy 1 site and be built in conjunction with that development. Such a route would help to not only relieve the traffic flows at the junction of Thaxted Road and Radwinter Road, but also help to channel traffic away from the centre of the town. It would, however, lead to additional traffic on the alternative route of Peaslands Road/Mount Pleasant Road and Borough Lane and Debden Road, to the south of the town centre.

The key movements which were considered likely to transfer to the link road are:

- Northbound and southbound along Thaxted Road which is destined towards or originating from Radwinter Road.
- Westbound from Radwinter Road to Newport Road through the town, which would have used East Street, Audley End Road and London Road.
- Eastbound from Newport Road to Radwinter Road through town, which would have used London Road, George Street and East Street.

Assumptions have been made with regard to the proportions of traffic movements which would transfer to the link road and Peaslands Road-Mount Pleasant Road-Borough Lane/ Debden Road route and how the flows would reassign on the local road network. This methodology has been developed using a combination of observed junction turning movements and professional judgement. In broad terms it was assumed that:

10% of Radwinter Road westbound traffic going straight ahead at the Thaxted Road junction would use the link road and Peaslands Road route instead;

50% of Radwinter Road westbound traffic going left at the Thaxted Road junction would use the link road instead and just over 50% of this diverted traffic would then turn towards Peaslands Road, the remainder travelling south away from the town;

50% of Thaxted Road northbound traffic right-turning at the Radwinter Road junction is assumed to use the link road;

10% of eastbound London Road traffic approaching from the west of the town is assumed to divert to Borough Lane and Mount Pleasant Road and thence to the link road.

See **Figure 7-3** for an overview of the spreadsheet model traffic reassignment. This is illustrated in greater detail in Appendix F and explained in more detail in the Technical Note in Appendix H.

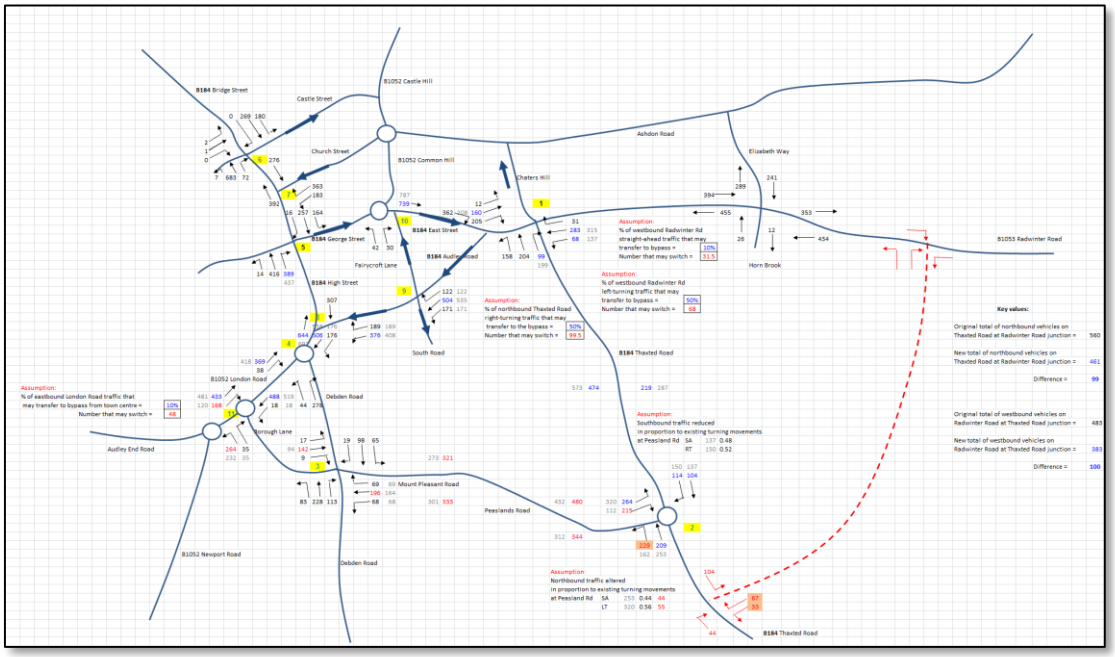


Figure 7-3: Link road reassignment illustration

These reassignments were followed through with all the relevant junction turning movements adjusted accordingly. All junctions affected by the reassignment were then reassessed and the results are summarised in Table 7-2, again with the worst peak hour impact categorised. The table also includes the 'without link road' results for ease of comparison.

Table 7-2: Summary of Saffron Walden Junction Capacity Status with Eastern Link Road Implemented

		2026		
	Junction	**Committed**	**Committed + ULP**	**With Link Rd**
1	B185 Thaxted Rd / B1053 Radwinter Rd	**2**	**2**	**2**
2	B184 Thaxted Rd / Peaslands Rd	**1**	**2**	**2**
3	Mount Pleasant Rd / Debden Rd	**0**	**1**	**2**
4	B1052 London Rd / Debden Rd	**2**	**2**	**1**
5	B184 High St / B184 George St	**2**	**2**	**2**
6	B184 High St / Castle St	**0**	**0**	**0**
7	B184 High St / Church St	**2**	**2**	**2**
8	B184 Audley Rd / B184 High St	**2**	**2**	**1**
9	B184 East St / Fairycroft Rd / Cates Cnr	**0**	**0**	**0**

		2026		
	Junction	**Committed**	**Committed + ULP**	**With Link Rd**
10	B1052 London Rd / Borough Ln	1	1	1
10b	B1052 Newport Rd / Audley End Rd	2	2	2

Figure 7-4 and Figure 7-5 illustrate how the junctions are expected to be affected with the link road in place for each peak hour.

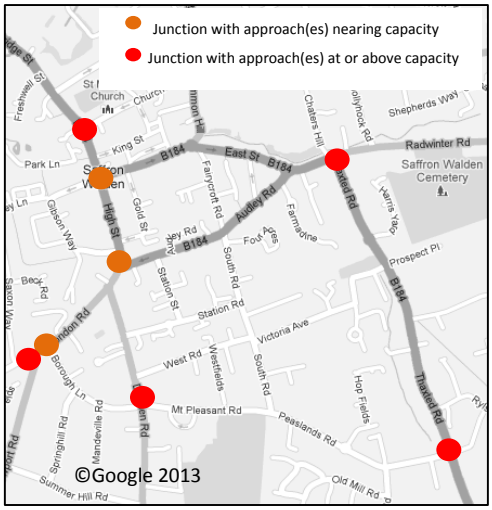


Figure 7-4: 2026 Base+ULP+Link Road AM Network Operation

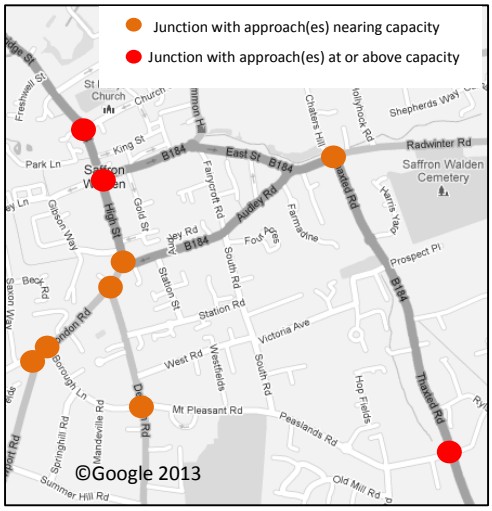


Figure 7-5: 2026 Base+ULP+Link Road PM Network Operation

The following commentary sets out the key impacts on the affected junctions

- Thaxted Road / Radwinter Road junction - reduction in flow on the East Street, Thaxted Road and Radwinter Road routes would help to relieve congestion from a position of being over capacity on all approaches in both peak hours to that of one where just Radwinter Road would reach capacity.
- Thaxted Road / Peaslands Road - increase in traffic heading south:west through the junction would not lead to a notable worsening in operation, although the junction would be over capacity in the 2026 with ULP scenario.
- Mount Pleasant Road / Borough Lane / Debden Road - increase in traffic along Mount Pleasant Road and Borough Lane would result in these two approaches approaching or reaching capacity.
- Debden Road / London Road - reduction in traffic would relieve congestion on the Debden Road north approach, with the approach falling below capacity in the PM peak.
- High Street / George Street - reduction in traffic would reduce some congestion on both the High Street north and High Street south approaches, although not by significant amounts.
- High Street / Audley Road - reduction in traffic at the junction would reduce some congestion on Audley Road, with the approach likely to fall below capacity.
- Borough Lane / London Road - transfer of traffic to Borough Lane from the London Road north approach would not be expected to have a marked impact on the operation of the approaches.

While the link road helps to reduce pressure at the Thaxted Road/Radwinter Road junction it is still over capacity, and many other junctions would be likely to continue to experience capacity issues in 2026 with committed and ULP developments. Additional mitigation measures were therefore required to enable delivery of the ULP developments.

7.3 Saffron Walden Further Mitigation Measures

To mitigate congestion at the Thaxted Road/Radwinter Road junction and to reduce impact on the Peaslands Road corridor, two further measures were identified. These are intended to positively influence route choices for drivers, and are:

MM1: Introduce a northbound No Entry restriction on Thaxted Road at its junction with Peaslands Road; and
MM2: Introduce a northbound No Entry restriction on Debden Road at its junction with Mount Pleasant Road.

Each of these measures is discussed in more detail below.

7.3.1 Thaxted Road northbound closure (MM1)

The proposal to introduce a northbound No Entry restriction on Thaxted Road at its junction with Radwinter Road is expected to have the effect of reducing the level of traffic on the Thaxted Road arm approach at its junction with Radwinter Road. It would also be likely to result in a fall in traffic using the Audley Road and George Street one-way routes. There

would, however, also be a further increase in traffic using Peaslands Road, Mount Pleasant Road and Borough Lane, and the restriction would be likely to lead to greater use of the link road.

The key assumptions used in reassigning the traffic are:

The same reassignment proportions as already detailed for the link road, where relevant;

30% of northbound traffic on Thaxted Road at the Radwinter Road junction is assumed to be local to Thaxted Road so will remain at the junction;

30% of traffic on the Mount Pleasant Road / Peaslands Road corridor is assumed to be local;

Observed turning proportions at the Thaxted Road/Radwinter Road junction used to reassign flows at the Thaxted Road/Peaslands Road junction and subsequently either via the link road or to Peaslands Road-Mount Pleasant Road- Borough Lane/Debden Road as appropriate.

Figure 7-6 gives a snapshot of the reassignment inputs, which are shown in more detail in Appendix F.

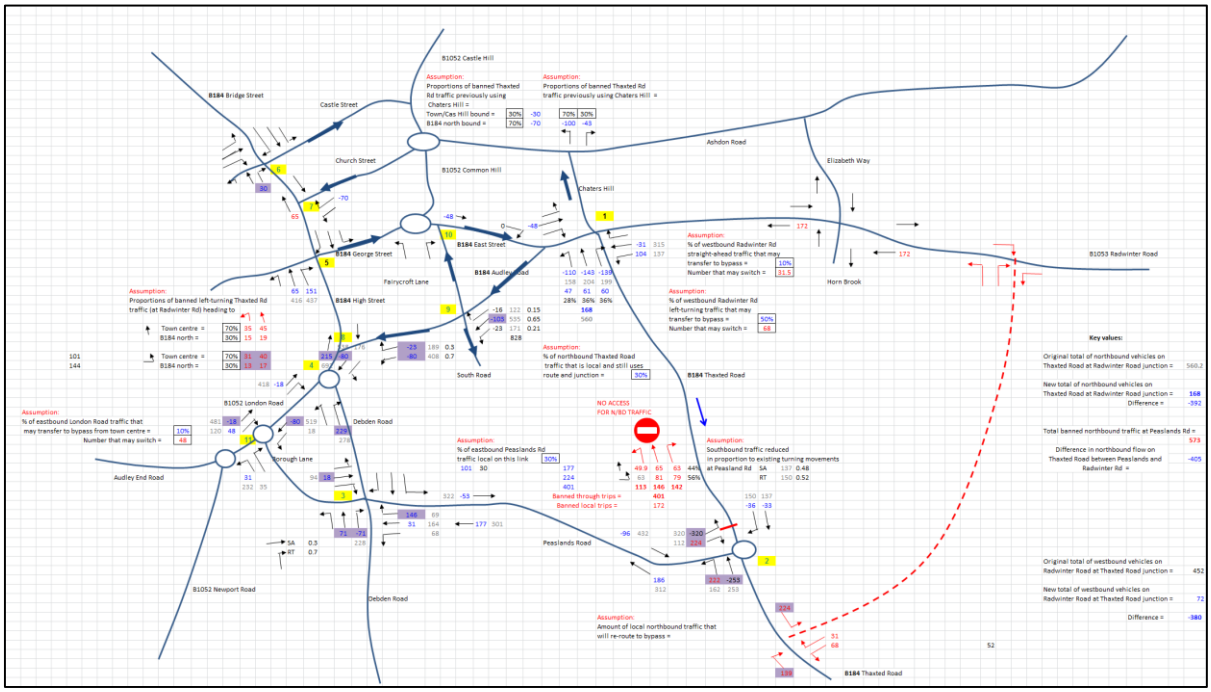


Figure 7-6: Link Road and Thaxted Road northbound closure reassignment illustration

The junctions that were considered likely to be affected by the manual reassignment of link road and MM1 traffic were reassessed and the results detailed in Appendix H. **Table 7-3** summarises the overall junction capacities, with the results **Table 7-2** included for ease of reference.

Table 7-3: Summary of Saffron Walden Junction Capacity Status with Link Road & Thaxted Road restriction (MM1) in place

		2026			
	Junction	**Committed**	**Committed + ULP**	**With Link Rd**	**With Link Rd & MM1**
1	B185 Thaxted Rd / B1053 Radwinter Rd	2	2	2	2
2	B184 Thaxted Rd / Peaslands Rd	1	2	2	2
3	Mount Pleasant Rd / Debden Rd	0	1	2	2
4	B1052 London Rd / Debden Rd	2	2	1	2
5	B184 High St / B184 George St	2	2	2	2
6	B184 High St / Castle St	0	0	0	0
7	B184 High St / Church St	2	2	2	2
8	B184 Audley Rd / B184 High St	2	2	1	1
9	B184 East St / Fairycroft Rd / Cates Cnr	0	0	0	0
10	B1052 London Rd / Borough Ln	1	1	1	2
10b	B1052 Newport Rd / Audley End Rd	2	2	2	2

Figure 7-7 and Figure 7-8 illustrate the effective operation of the key junctions in the town with these measures in place.

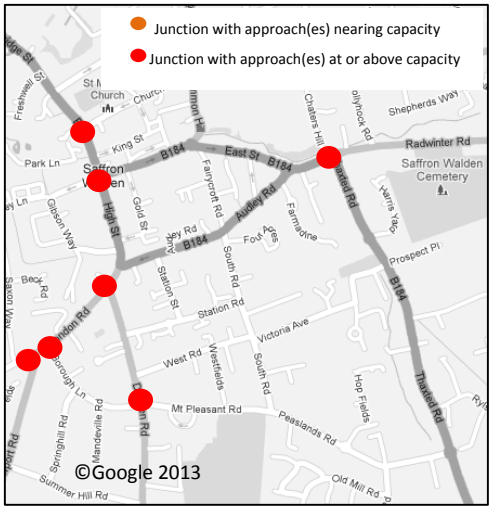


Figure 7-7: 2026 Base+ULP+MM1 AM Network Operation

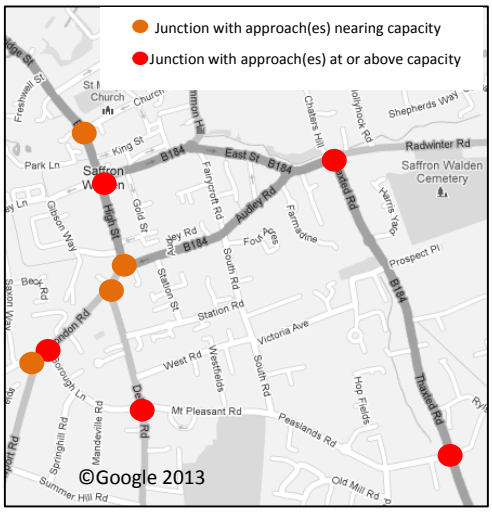


Figure 7-8: 2026 Base+ULP+MM1 PM Network Operation

In more detail the assessments revealed the following key findings:

- Thaxted Road / Radwinter Road junction - reduction in northbound flows on Thaxted Road would lead to a significant drop in delay on its approach to the junction. However, Radwinter Road would be likely to experience further congestion as local traffic is reassigned on to the link road and the route from Thaxted Road south of Peaslands Road in order to reach Thaxted Road north of Peaslands Road.
- Thaxted Road / Peaslands Road - significant improvement to the operation of the Thaxted Road south and Peaslands Road approaches but a significant worsening in conditions on Thaxted Road north in the PM peak would occur due to the increase in traffic moving from west to south.
- Mount Pleasant Road / Borough Lane / Debden Road - increase in traffic along Mount Pleasant Road would result in this approach functioning at a level well over capacity in both the AM and PM peak hours.
- Debden Road / London Road - Debden Road south would reach capacity in the AM peak as a result of the reassigned traffic using the junction.
- High Street / George Street - additional traffic at the junction would lead to both the High Street north and south approaches operating above capacity with associated excessive queuing.
- High Street / Church Street - measure would lead to a reduction in traffic on Church Street and a subsequent slight improvement in operation, albeit not a marked one.
- London Road / Borough Lane - the London Road west approach would reach capacity with the measure in place.

The findings suggest that the closure of Thaxted Road northbound north of Peaslands Road would have a significant impact on several of the junctions in the town. If MM1 were to be implemented it is evident that additional mitigation measures would be required.

7.3.2 *Debden Road No Entry northbound at Mount Pleasant Road/Borough Lane junction (MM2)*

As previously stated the second mitigation measure involves restricting northbound traffic along Debden Road north of its junction with Mount Pleasant Road and Borough Lane. The introduction of a No Entry restriction at this location would prevent northbound through-movements and significantly reduce the flow approaching the junction with London Road.

The assumptions made with regard to likely traffic reassignment due to MM2 are:

At the Mount Pleasant Road junction:

All traffic which currently turns towards Debden Road north from both Debden Road south and Mount Pleasant Road will instead travel via Borough Lane;

Traffic which is currently observed to turn from Borough Lane to Debden Road south is assumed instead to enter Debden Road from London Road.

At the Debden Road / London Road junction:

It is assumed that 5% of traffic which currently approaches from south of Mount Pleasant Road turns left into London Road, the remainder turns right;

Of the total traffic which approaches the junction from Debden Road, it is assumed that 10% is local, ie has arrived from the immediate vicinity or via Station Road.

Figure 7-9 illustrates these modelled reassignment assumptions.

The consequence of this measure is likely to be a substantial increase in traffic on Borough Lane and London Road west of the junction with Debden Road. It has been assumed that only three of the junctions already assessed within this study would be expected to be directly affected by this mitigation measure:

- Debden Road / Mount Pleasant Road / Borough Lane
- B1052 London Road / Borough Lane
- Debden Road / B1052 London Road

These junctions were re-evaluated and the results detailed in Appendix H. In terms of overall effect the outcomes do not vary from those reported for MM1 in **Table 7-3**. However, the key findings are:

- Mount Pleasant Road / Debden Road junction - The reassignment would not cause any discernible change to junction operation as the total flow at the junction would remain the same.
- Debden Road / London Road – The transfer of traffic from Debden Road south to London Road would lead to the London Road approach being near capacity in the AM peak. Debden Road would reach capacity in the PM peak as there would be a larger right turn flow passing in front from London Road.
- London Road / Borough Lane – The closure on Debden Road would have its greatest impact on this junction. Borough Lane would operate significantly above capacity with associated extensive queuing, particularly in the AM peak, while the London Road south approach would also be heavily impacted on by this vastly increased flow turning right in front and consequently would operate above capacity.

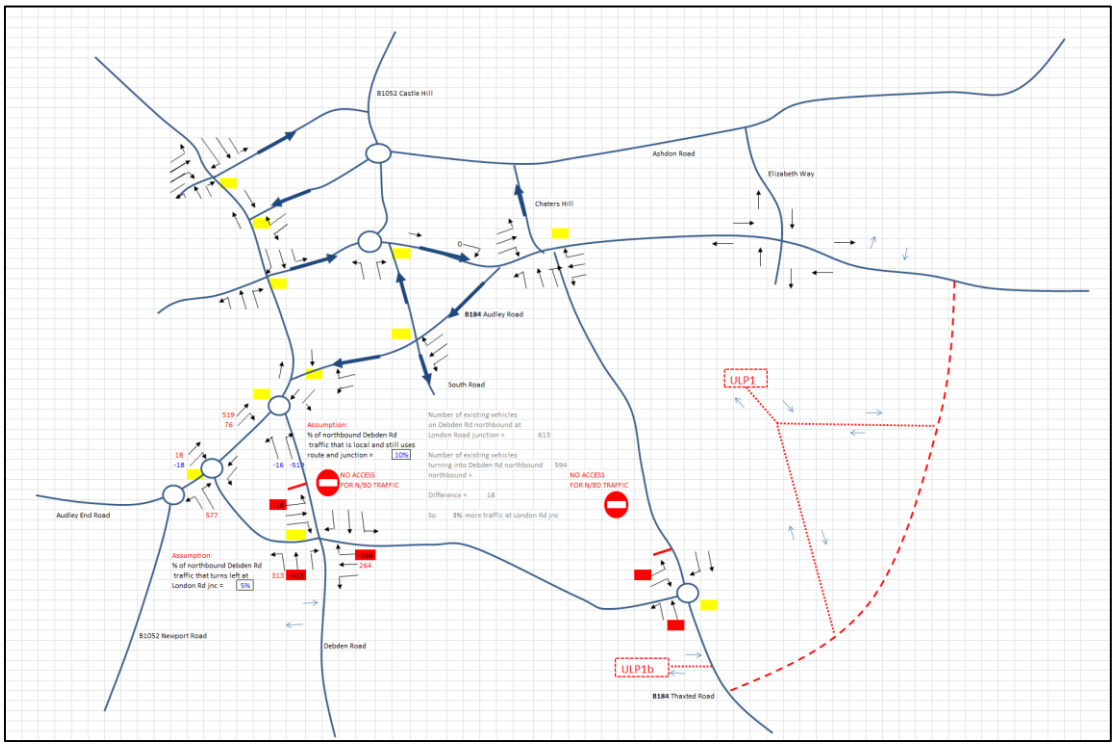


Figure 7-9: Debden Road, Thaxted Road northbound closures and link road as included within the spreadsheet model

The findings suggest, therefore, that if MM2 were to be implemented some further mitigation measures would be required at both the Mount Pleasant Road and Debden Road/London Road junctions. These measures, and others, are discussed further in the next section.

7.3.3 Saffron Walden Additional Mitigations Measures (MM3-MM8)

As indicated in the results outlined in **Table 7-3** further junction improvements are needed in order to mitigate the impact of the ULP developments. Improvements have been identified at the seven junctions listed below, and detailed in the following sections.

- B184 Thaxted Road / B1053 Radwinter Road (MM3)
- B184 Thaxted Road / Peaslands Road mini-roundabout (MM4)
- Mount Pleasant Road / Debden Road (MM5)
- B1052 London Road / Debden Road mini-roundabout (MM6)
- B184 High Street / B184 George Street (MM7)
- B1052 London Road / Borough Lane & B1052 Newport Road / Audley End Road (MM8)

7.3.4 B184 Thaxted Road / B1053 Radwinter Road (MM3)

This junction is currently signalised with pedestrian facilities incorporated, and operates with a high level of delay. The new link road and MM1 and MM2 would change the movements through the junction. It is considered that these changes, particularly the reduction in northbound traffic on Thaxted Road, would enable the junction to be converted into a priority

arrangement with the minor flow on Thaxted Road giving way to traffic on Radwinter Road and East Street. This would remove all delay on the Radwinter Road approach and ensure that only right-turning traffic from East Street be required to queue on the major carriageway. This revised layout is shown below in **Figure 7-10** and Appendix I.

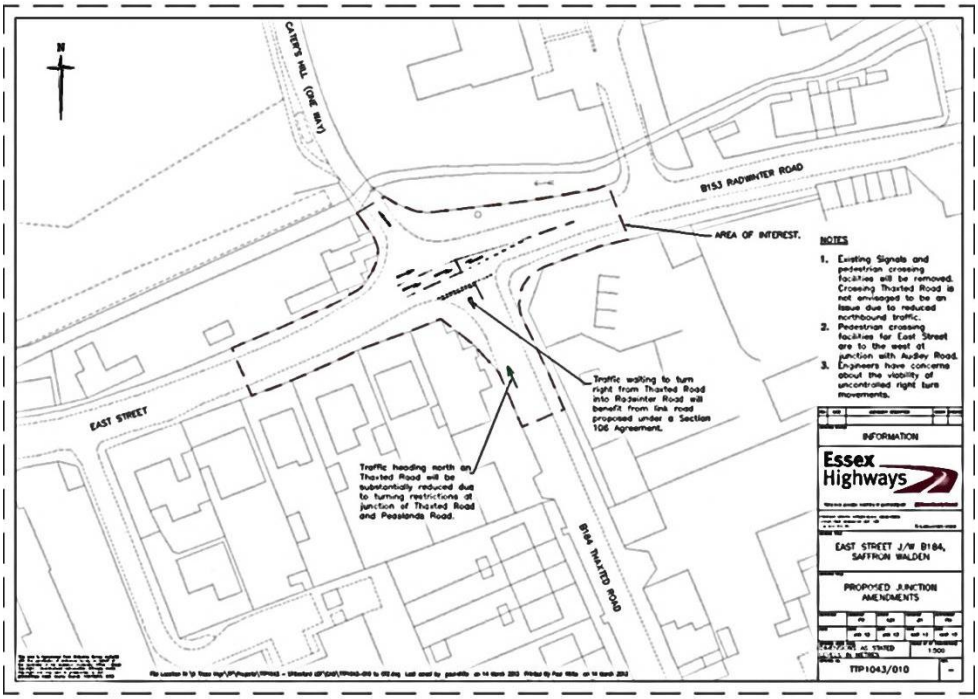


Figure 7-10: Thaxted Road / Radwinter Road junction with Priority layout (MM3)

This proposed layout was evaluated, and the results are reported in detail in Appendix H. The assessments indicated that such a layout at the junction would enable it to operate within capacity and with minimal queuing on all approaches. The only potential issue would be created by traffic waiting to turn right into Thaxted Road from East Street and consequently blocking straight-ahead traffic. However, this situation already occurs with its current signalised configuration.

7.3.5 B184 Thaxted Road / Peaslands Road mini-roundabout (MM4)

This junction of Thaxted Road and Peaslands Road, which is currently laid out as mini-roundabout, would experience a significant increase in traffic using the junction following the introduction of the link road. The northbound closure of Thaxted Road north of the junction (MM1) would also change the turning proportions of traffic flows on the approaches, which is expected to result in extensive queuing on the Thaxted Road north arm.

A signalised layout has been drawn up to address this issue, and the layout shown below in **Figure 7-11.**

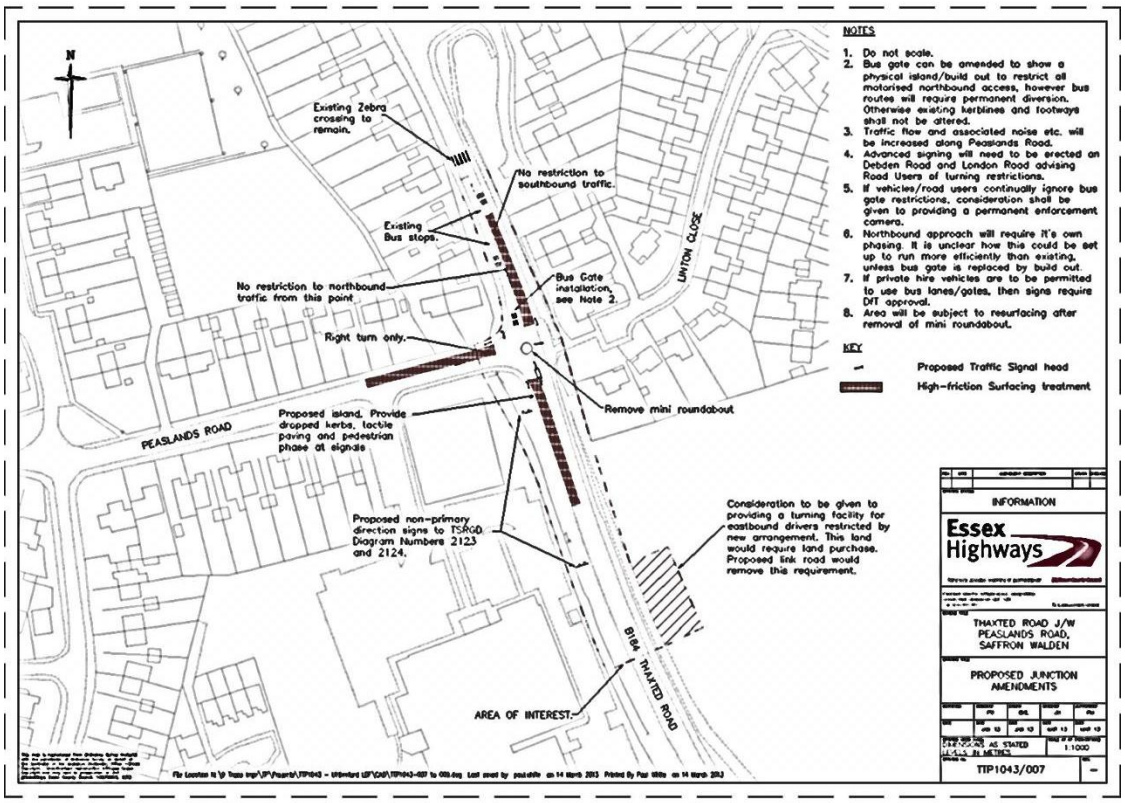


Figure 7-11: Thaxted Road / Peaslands Road junction with signalised layout (MM4)

The analysis of this layout suggests that the measure would result in the junction operating within capacity and, in particular, would reduce the queuing on Thaxted Road north. While incorporation of pedestrian crossings in the layout has not been directly reported, evaluation has found that such an arrangement would still enable the junction to operate within capacity.

7.3.6 Mount Pleasant Road / Debden Road (MM5)

This junction is currently a priority crossroads, although a signalised layout has been approved as part of recent planning permissions. The introduction of the link road would be likely to change the key movements though the junction and changing the priority of the junction was therefore evaluated (making the east:west movements the major movements, and the north:south movements having to giveway). However, testing of this layout found that there would still be queuing on the minor approaches.

A signalised junction layout was therefore drawn up, as shown in below in **Figure 7-12**, which allows the junction to operate according the traffic demands on individual arms.

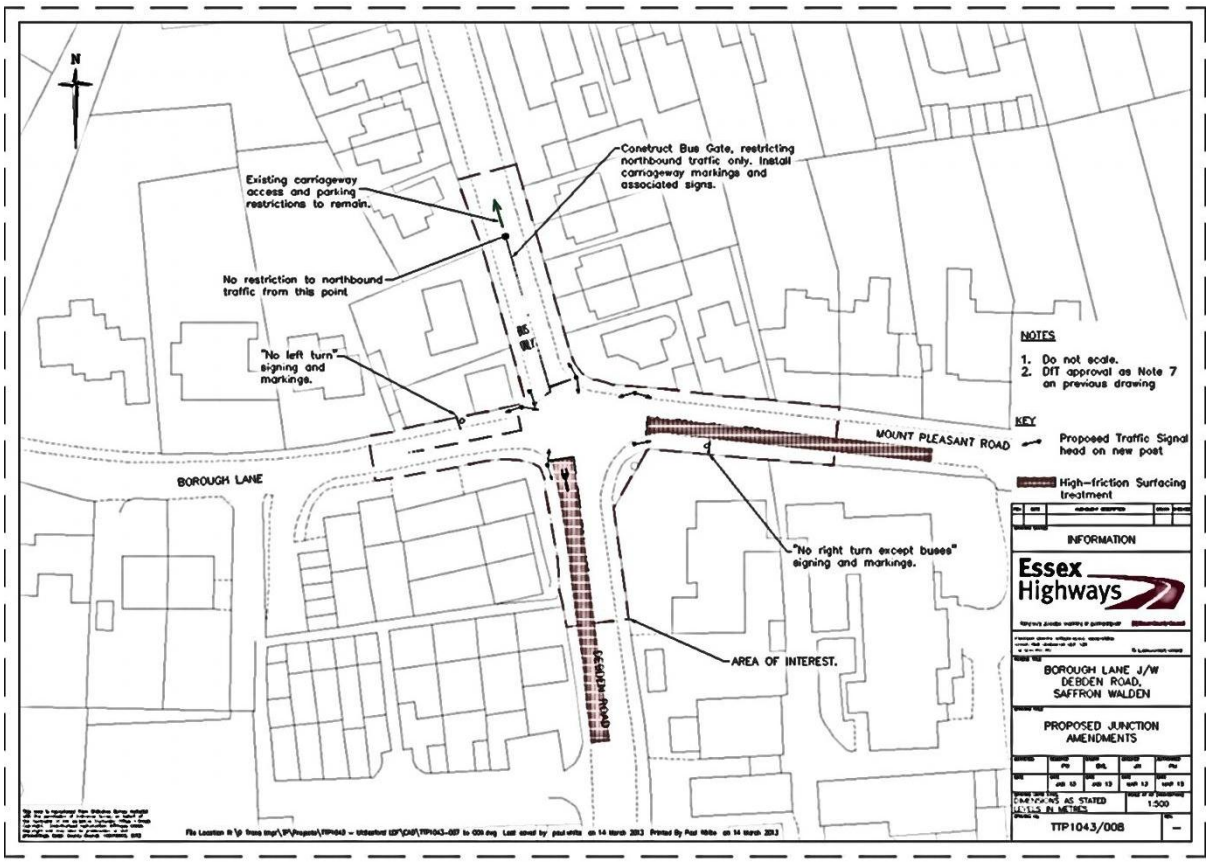


Figure 7-12: Mount Pleasant Road / Borough Lane / Debden Road junction signalised (MM5)

Assessments of the revised junction layout were undertaken using LinSig, the results of which can be found in Appendix H.

The modelling of the signalised layout found that this would reduce queuing on Mount Pleasant Road albeit at the cost of increased queues on the other approaches. The results suggest that the junction would operate with some spare overall capacity, although the introduction of a pedestrian stage would cause some approaches to reach saturation. However, the overall amount of queuing would not be expected to rise significantly.

7.3.7 Debden Road / London Road (MM6)

This mini-roundabout junction would experience a significant drop in traffic on the Debden Road south approach with the introduction of a northbound ban of traffic to the south at the Mount Pleasant Road / Debden Road junction. This would enable the junction to be changed to a priority configuration, with the Debden Road south arm then giving way to the other two arms. Such an arrangement would mean that traffic from the east would no longer need to give way on the approach to the junction and that traffic from the west would also be more free-flowing, needing only to be held up for vehicles turning right into Debden Road south.

The priority junction layout considered is shown below in **Figure 7-13**.

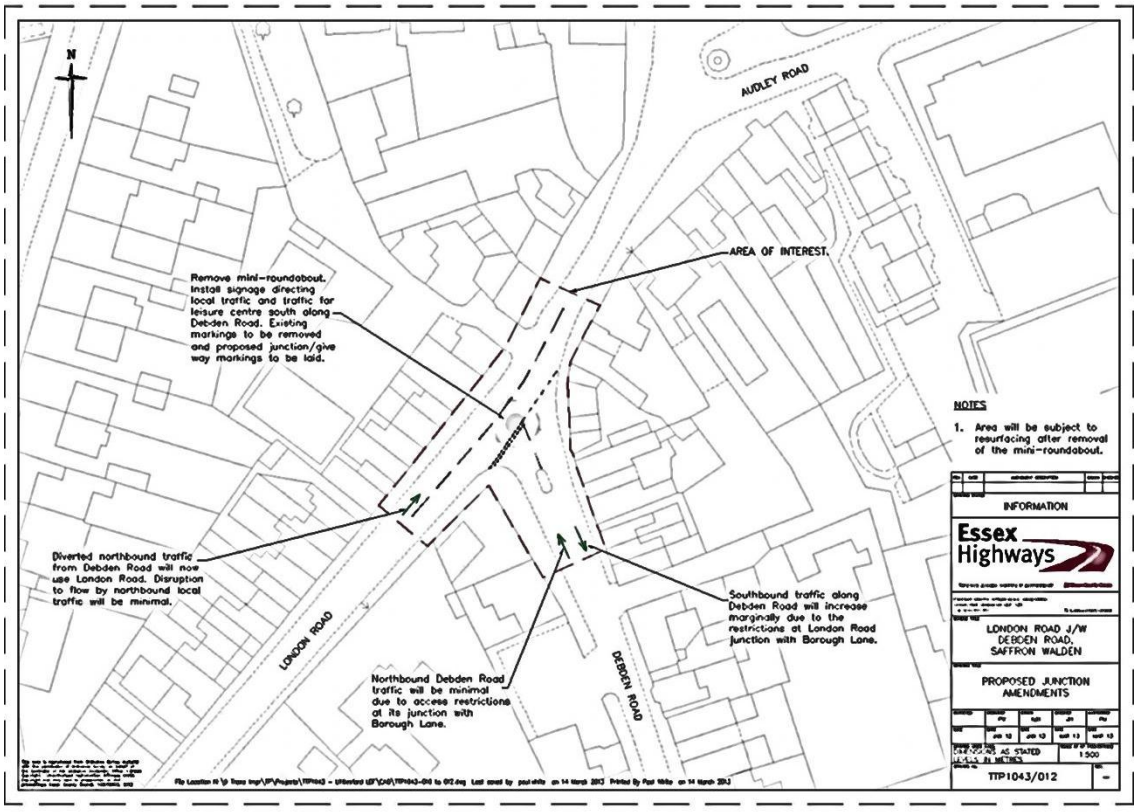


Figure 7-13: Debden Road / London Road junction with priority layout (MM6)

Assessments of the revised junction layout were undertaken and the results suggest that the revised layout would only lead to moderate queuing on the London Road approach in both the AM and PM peak hours and provide an overall benefit over the mini-roundabout layout, largely due to the removal of the queuing on Debden Road north.

7.3.8 High Street / George Street (MM7)

This junction is a key bottleneck in the town and the additional traffic which is likely to result from the committed development, as well from the proposed ULP development has required a review of possible mitigation measures. A scheme is proposed which involves banning parking on the High Street south of the junction to allow for two full approach traffic lanes. In addition it is proposed to relocate the pedestrian crossing away from the junction itself to a location that more closely aligns to the pedestrian desire line between the town centre and the pedestrian route through to Park Lane and the Swan Meadow car park. The revised junction layout is shown in **Figure 7-14**.

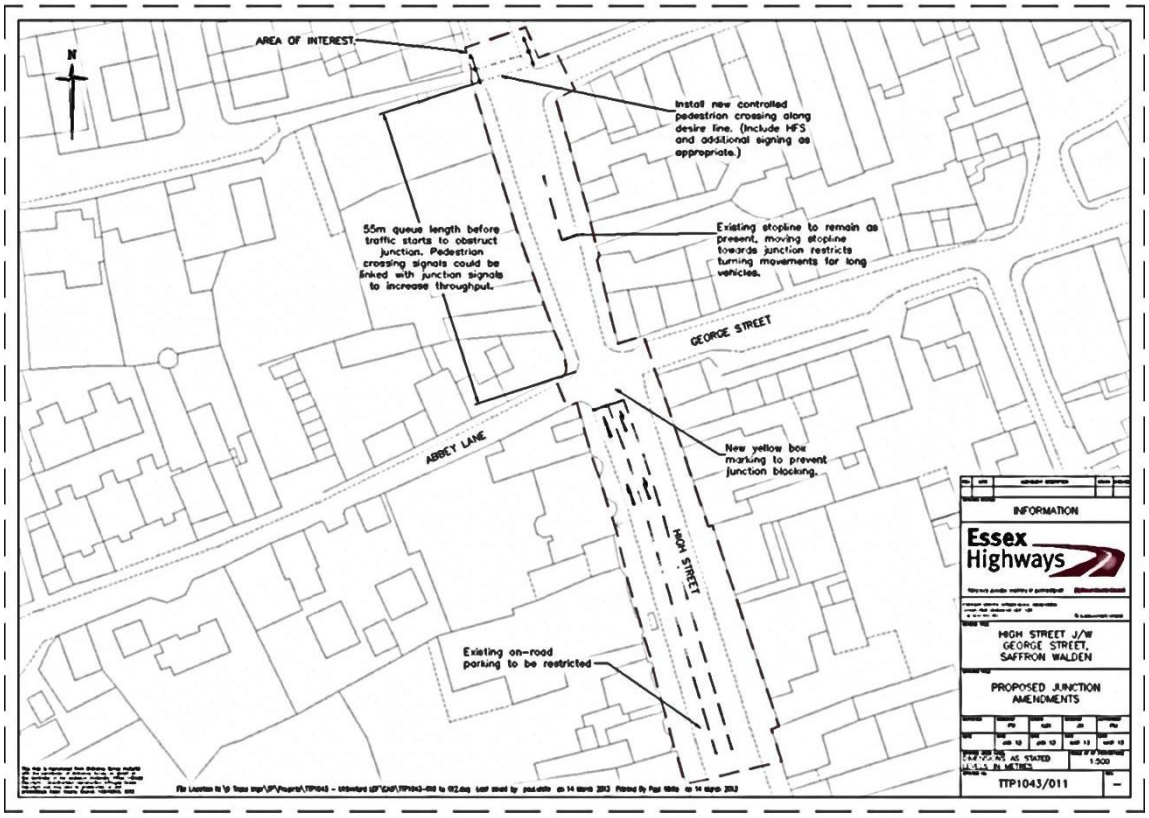


Figure 7-14: High Street / George Street junction modification (MM8)

The results of the modified junction assessment indicate that the scheme would bring about some benefit to the operation of the junction, with reduced queuing on both approaches. However, the junction would still operate over capacity.

7.3.9 London Road / Borough Lane & Newport Road / Audley End Road (MM8)

The northbound closures of Thaxted Road and Debden Road to through traffic (MM1 & MM2) would result in a significant number of additional vehicles using Borough Lane to access the local road network. It would, therefore, be necessary to identify measures to accommodate this extra traffic in this area of the road network. Several options were considered:

London Road/Borough Lane:

Signalisation - full movements

Signalisation - with Borough Lane one-way north-west bound

Newport Road / Audley End Road:

Priority layout with Audley End Road as minor arm

Signalisation of the Borough Lane junction would provide a flexible way of controlling the additional traffic demand. However initial testing showed that signalisation of the junction with all movements enabled would not provide a workable solution.

The scheme was therefore modified to make Borough Lane one-way on its approach to the junction, enabling two full lanes to approach the stopline. The reconfiguration of the Borough Lane junction would also have an impact on the operation of the Newport Road/Audley End Road junction, where the mini-roundabout layout would not be appropriate so close to a signalised junction. A modification at this junction, involving introducing priority junction layout, with the Newport Road movement taking priority over the Audley End Road approach, has therefore been devised. This also enables a greater storage area for traffic approaching the Borough Lane junction from the west. Pedestrian crossing facilities have also been incorporated in the design given the proximity of the County High School and District Council Offices.

The revised layout for both these junctions is shown in **Figure 7-15.**

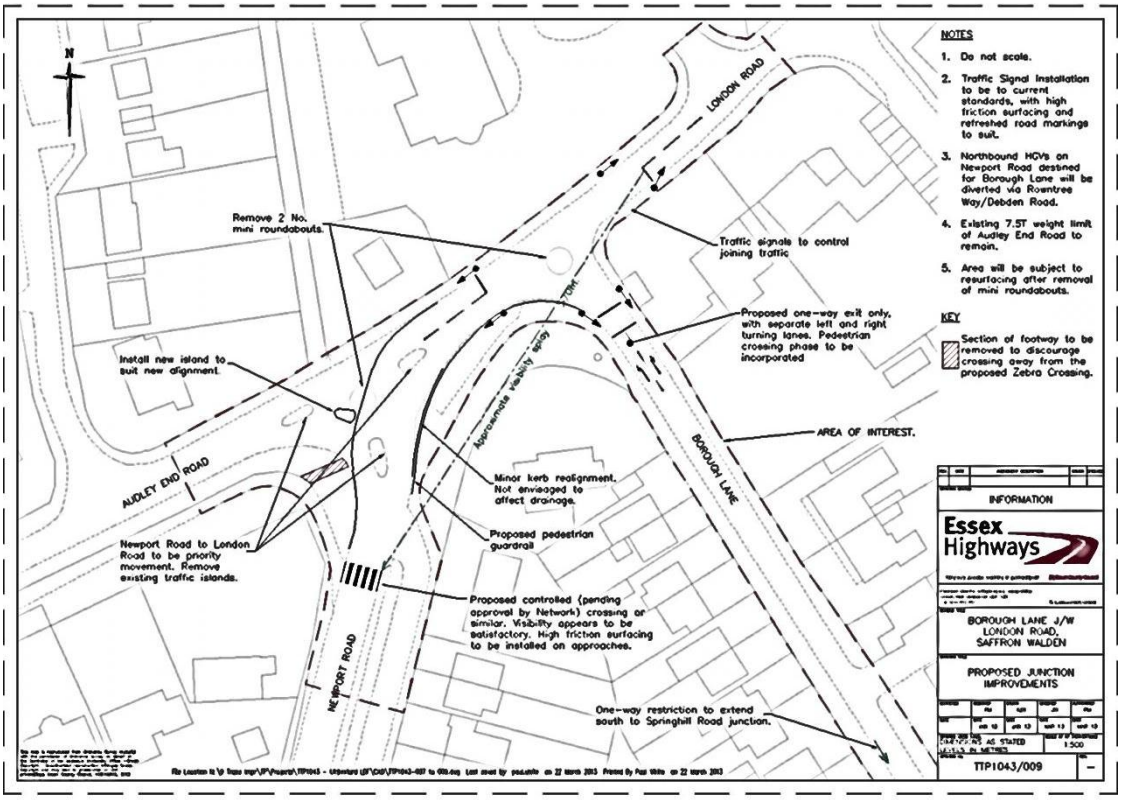


Figure 7-15 London Rd / Borough Ln & Newport Rd / Audley End Rd Junctions (MM8)

Assessments of the revised junction layout found that there would be a significant amount of additional capacity at the London Road / Borough Lane junction. However whilst the results suggest that the junction would operate within capacity, queuing levels would still be relatively high in the AM peak hour, with some tail backs through the Newport Road / Audley End Road priority junction.

The results of the analysis of the priority junction show that the revised Newport Road / Audley End Road junction would not operate within capacity, with the London Road and Audley End Road approaches operating over capacity in the AM and PM peak hours respectively. Its operation would also be regularly affected by traffic queuing back from the neighbouring London Road / Borough Lane junction. The use of 'Keep Clear' road markings at the priority junction on the eastbound carriageway may be appropriate in order to enable traffic to turn right into Audley End Road without causing delays to south-west bound traffic.

7.4 Saffron Walden Mitigation Measures Summary Results

The final outcome on junction capacities of the implementation of all of the mitigation measures set out above is summarised in **Table 7-4**, again with the worst peak hour impact denoted. Where the mitigiation measure has improved the operation of the junction, the value has been displayed in green. **Figure 7-16** and **Figure 7-17** illustrate the junction impacts in each peak hour with the mitigation measures in place.

Table 7-4: Saffron Walden Junction Capacity Analysis Summary: Final

		2026			
	Junction	Committed	Committed + ULP	With Eastern Link Road	With Mitigation Measures
1	B185 Thaxted Rd / B1053 Radwinter Rd	2	2	2	0
2	B184 Thaxted Rd / Peaslands Rd	1	2	2	0
3	Mount Pleasant Rd / Debden Rd	0	1	2	2
4	B1052 London Rd / Debden Rd	2	2	1	1
5	B184 High St / B184 George St	2	2	2	2
6	B184 High St / Castle St	0	0	0	0
7	B184 High St / Church St	2	2	2	2
8	B184 Audley Rd / B184 High St	2	2	1	2
9	B184 East St / Fairycroft Rd / Cates Cnr	0	0	0	0
10	B1052 London Rd / Borough Ln	1	1	1	0
10b	B1052 Newport Rd / Audley End Rd	2	2	2	2

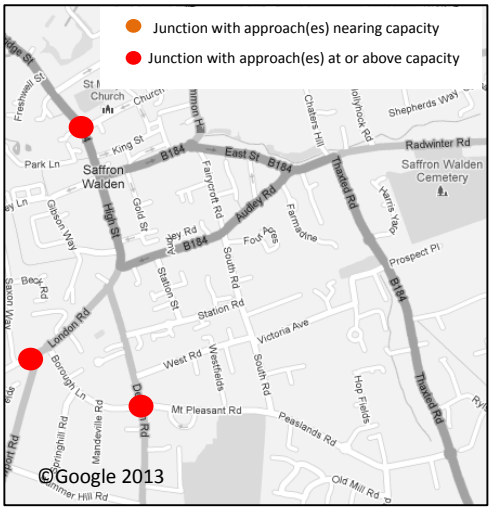


Figure 7-16: 2026 Base+ULP+All Mitigation Measures AM Peak Hour

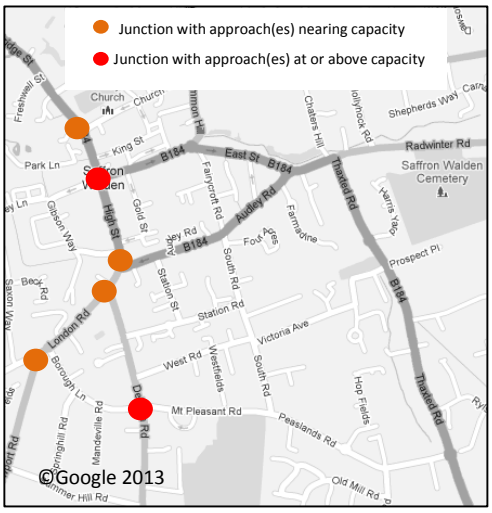


Figure 7-17: 2026 Base+ULP+All Mitigation Measures PM Peak Hour

In detail the analysis of each of the junctions in each time period is summarised below in Table 7-5 and Table 7-6, which shows the capacity and maximum queue on each arm of each junction in 2026 with Committed Development in place, and again with the ULP developments and all of the proposed highway improvements. In addition the categorisation of the junction by overall level of capacity available is included in the final column, together with comments on the change over the 2026 with Committed Development scenario.

Table 7-5: Saffron Walden 2026 AM Peak Junction Capacity With Link Road & All Mitigation Measures

Approach & Lane		2026 AM + Committed		2026 AM Committed + ULP		2026 AM Committed + ULP, Link Rd & All MM		AM Comments and categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 1 – B184 Thaxted Road / B1053 Radwinter Road								**0: Improvement**
B1053 Radwinter Rd	1	104.9%	**46**	116.7%	**76**	-	-	
B184 Thaxted Rd	1	103.8%	**48**	106.7%	**56**	0.64	**2**	
B184 East St	1	80.5%	**22**	83.4%	**23**	0.50	**1**	
Junction 2 - B184 Thaxted Road / Peaslands Road								**0: No change**
B184 Thaxted Rd N	1	0.45	**1**	0.51	**1**	47.0%	**3**	
B184 Thaxted Rd S	1	0.66	**2**	0.94	**11**	50.8%	**4**	
Peaslands Rd	1	0.83	**4**	1.01	**19**	44.5%	**3**	
Junction 3 – Debden Road / Mount Pleasant Road / Borough Lane								**2: Worse**
Debden Rd N	1	0.04	**0**	0.04	**0**	37.6%	**5**	
Mount Pleasant Rd	1	0.51	**2**	0.98	**18**	101.3%	**30**	
Debden Rd S	1	0.23	**0**	0.26	**0**	98.8%	**27**	
Borough Ln	1	0.39	**1**	0.48	**1**	2.6%	**0**	
Junction 4 – Debden Road / B1052 London Road								**0: No change**
B1052 Debden Rd N	1	0.83	**5**	0.87	**6**	-	-	
Debden Rd S	1	0.60	**2**	0.68	**2**	0.33	**0**	
B1052 London Rd	1	0.46	**1**	0.48	**1**	0.61	**4**	
Junction 5 – B184 High Street / B184 George Street								**1: Improvement**
High St N	1	89.3%	**13**	94.2%	**16**	87.6%	**13**	
High St S	1	93.9%	**5**	100.1%	**5**	71.4%	**12**	
	2		**15**		**27**	86.9%	**15**	
Junction 6 – B184 Bridge St / Castle St								**0: No change**
B184 Bridge St	1	-	-	-	-	-	-	
B184 High St	1	0.16	**0**	0.17	**0**	0.25	**0**	
Junction 7 – B184 High St / Church St								**2: Marginal impt**
Church St	1	1.27	**79**	1.38	**115**	1.22	**62**	
Junction 8 – B184 Audley Road / High Street								**0: Improvement**
B184 Audley Road	1	0.94	**10**	1.00	**15**	0.82	**4**	
	2	0.61	**1**	0.69	**2**	0.68	**2**	
Junction 9 - Fairycroft Road / Cates Corner								**0: No change**
Fairycroft Road	1	0.07	**0**	0.07	**0**	0.07	**0**	
	2	0.07	**0**	0.07	**0**	0.07	**0**	
Junction 10a – B1052 London Road / Borough Lane								**0: Improvement**
B1052 London Rd N	1	0.87	**6**	0.90	**7**	75.4%	**12**	
Borough Ln	1	0.62	**2**	0.78	**3**	45.1%	**7**	
	2					82.6%	**16**	
B1052 London Rd S	1	0.77	**3**	0.80	**4**	83.0%	**15**	

Approach & Lane		2026 AM + Committed		2026 AM Committed + ULP		2026 AM Committed + ULP, Link Rd & All MM		AM Comments and categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 10b – B1052 Newport Road / Audley End Road								**2: Improvement**
B1052 Newport Road	1	1.06	**39**	1.07	**42**	-	**-**	
Audley End Road	1	0.88	**6**	0.90	**7**	0.71	**2**	
	2					0.60	**1**	
B1052 London Rd	1	0.58	**1**	0.62	**2**	1.06	**11**	

Table 7-6: Saffron Walden 2026 PM Peak Junction Capacity With Link Road & All Mitigation Measures

Approach & Lane		2026 PM + Committed		2026 PM + Committed + ULP		2026 PM + Committed + ULP, Link Rd & All MM		Comments on Table 7.4 categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 1 – B184 Thaxted Road / B1053 Radwinter Road								**0: Improvement**
B1053 Radwinter Rd	1	96.0%	**31**	101.8%	**40**	-	**-**	
B184 Thaxted Rd	1	108.9%	**58**	111.6%	**66**	0.74	**3**	
B184 East St	1	91.4%	**31**	104.1%	**51**	0.57	**1**	
Junction 2 - B184 Thaxted Road / Peaslands Road								**0: Improvement**
B184 Thaxted Rd N	1	0.90	**7**	1.08	**35**	70.8%	**6**	
B184 Thaxted Rd S	1	0.44	**1**	0.65	**2**	37.5%	**3**	
Peaslands Rd	1	0.83	**5**	1.09	**40**	73.1%	**6**	
Junction 3 – Debden Road / Mount Pleasant Road / Borough Lane								**2: Worse**
Debden Rd N	1	0.02	**0**	0.02	**0**	61.6%	**11**	
Mount Pleasant Rd	1	0.53	**2**	0.80	**6**	97.6%	**20**	
Debden Rd S	1	0.22	**0**	0.25	**0**	101.2%	**24**	
Borough Ln	1	0.56	**1**	0.82	**4**	8.6%	**1**	
Junction 4 – Debden Road / B1052 London Road								**1: Improvement**
B1052 Debden Rd N	1	0.99	**19**	1.04	**33**	-	**-**	
Debden Rd S	1	0.36	**1**	0.40	**1**	0.27	**0**	
B1052 London Rd	1	0.52	**1**	0.53	**1**	0.89	**14**	
Junction 5 – B184 High Street / B184 George Street								**2: Marginal Impt**
High St N	1	101.8%	**25**	112.8%	**50**	97.0%	**21**	
High St S	1	102.2%	**5**	106.1%	**5**	51.1%	**7**	
	2		**32**		**48**	100.3%	**28**	
Junction 6 – B184 Bridge St / Castle St								**0: No change**
B184 Bridge St	1	-	-	-	-	-	**-**	
B184 High St	1	0.23	**0**	0.25	**0**	0.33	**0**	

Approach & Lane		2026 PM + Committed		2026 PM + Committed + ULP		2026 PM + Committed + ULP, Link Rd & All MM		Comments on Table 7.4 categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 7 – B184 High St / Church St								**2: Marginal Impt**
Church St	1	1.00	**16**	1.08	**29**	0.92	**8**	
Junction 8 – B184 Audley Road / High Street								**2: Marginal Impt**
B184 Audley Road	1	0.99	**14**	1.04	**21**	0.94	**9**	
	2	0.54	**1**	0.60	**1**	0.62	**2**	
Junction 9 - Fairycroft Road / Cates Corner								**0: No change**
Fairycroft Road	1	0.12	**0**	0.12	**0**	0.12	**0**	
	2	0.34	**1**	0.35	**1**	0.34	**0**	
Junction 10a – B1052 London Road / Borough Lane								**0: Improvement**
B1052 London Rd N	1	0.87	**6**	0.92	**9**	64.2%	**7**	
Borough Ln	1	0.41	**1**	0.48	**1**	51.5%	**4**	
	2					80.7%	**7**	
B1052 London Rd S	1	0.85	**5**	0.95	**13**	78.5%	**11**	
Junction 10b – B1052 Newport Road / Audley End Road								**2: Worse**
B1052 Newport Road	1	0.94	**11**	0.99	**18**	-	**-**	
Audley End Road	1	0.65	2	0.68	**2**	1.07	**21**	
	2					1.02	**9**	
B1052 London Rd	1	0.74	**3**	0.81	**4**	0.67	**2**	

The final column for each of the two preceding tables is replicated in Table 7-7 below, so that the overall impact of the ULP proposals can be reviewed. Of the eleven junctions assessed with all ULP and infrastructure schemes in place, nine have been found to be either unchanged over the 2026 with Committed Development scenario, or are expected to have improved capacity as a result of the infrastructure changes proposed. Only two junctions are likely to be in a worse condition, the Mount Pleasant Road junction, in both time periods, and Newport Road / Audley End Road in the PM peak only.

Table 7-7 Summary of Final Impact of ULP Development Proposals on Saffron Walden Junction Capacity

Approach & Lane	AM Comments on Table 7.4 categorisation	PM Comments on Table 7.4 categorisation
Junction 1 – B184 Thaxted Rd / B1053 Radwinter Rd	0: Improvement	0: Improvement
Junction 2 - B184 Thaxted Rd / Peaslands Rd	0: No change	0: Improvement
Junction 3 – Debden Rd / Mount Pleasant Rd / Borough Ln	2: Worse	2: Worse
Junction 4 – Debden Rd / B1052 London Rd	0: No change	1: Improvement
Junction 5 – B184 High St / B184 George St	1: Improvement	2: Marginal improvement
Junction 6 – B184 Bridge St / Castle St	0: No change	0: No change
Junction 7 – B184 High St / Church St	2: Marginal improvement	2: Marginal improvement
Junction 8 – B184 Audley Rd / High St	0: Improvement	2: Marginal improvement
Junction 9 - Fairycroft Rd / Cates Corner	0: No change	0: No change
Junction 10a – B1052 London Rd / Borough Ln	0: Improvement	0: Improvement
Junction 10b – B1052 Newport Rd / Audley End Rd	2: Improvement	2: Worse

8 Impact of Potential ULP Sites in Great Dunmow

8.1 Western Bypass

As previously stated, all the analysis of the network impact of potential ULP sites in Great Dunmow has been undertaken with the assumption that the western bypass is in place. Using turning proportions from junction traffic survey data the likely transfer of existing background traffic to the western bypass has been estimated, together with the corresponding change in flows within the town centre. This reassignment of background traffic is illustrated in Appendix H, and the flow diagrams of the resulting network flows are contained in Appendix E for 2018, and Appendix F for 2026.

8.2 Link & Junction Overview

The impact of traffic from the proposed ULP sites on the main highway links in Great Dunmow has been reviewed in terms of the anticipated effect on junction operation. The following junctions have been assessed:

11. B1256 / Chelmsford Road ("Hoblongs") priority
12. B184 High Street / Stortford Road / B184 Market Place priority
13. Stortford Road / Rosemary Lane mini roundabout
14. A120 / B1256 Interchange roundabout
15. A120 / B1008 Interchange roundabout

These junctions have been assessed under the following traffic flow scenarios for both AM and PM peak periods:

- 2018 Base + Committed Dev with Bypass
- 2018 Base + Committed Dev + ULP Dev with Bypass
- 2026 Base + Committed Dev with Bypass
- 2026 Base + Committed Dev + ULP Dev with Bypass

The results of the analysis are summarised in Table 8-1 in terms of whether any arm of each of the junctions in either time period is expected to approach or exceed capacity ie the worst situation. The categories used are:

0 No capacity issues in either peak hour
1 One or more arms approaching capacity in either of the peak hours
2 One or more arms at or exceeding capacity in either of the peak hours

Table 8-1: Summary of Great Dunmow Junction Capacity Status

	2012	2018		2026	
Junction	**Base**	**Committed**	**Committed + ULP**	**Committed**	**Committed + ULP**
B1256 / Chelmsford Rd (Hoblong's)	1	1	1	1	2
B184 High St / Stortford Rd / Market Pl	0	0	0	0	0
Stortford Rd / Rosemary Ln	1	1	1	1	1
A120 / B1256 Interchange (north rbt)	0	0	0	0	2
A120 / B1256 Interchange (south rbt)	0	0	0	0	0

The junction analysis is reported in more detail in Appendix H.

Figure 8-1 and Figure 8-2 illustrate the junctions where it is anticipated that capacity issues could arise in 2026 with the ULP traffic assigned on to the network. Mitigation measures are discussed in the following section.

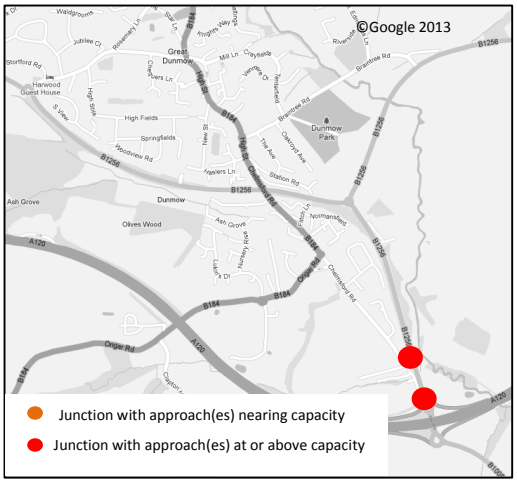


Figure 8-1: 2026 Base + ULP AM Network Operation

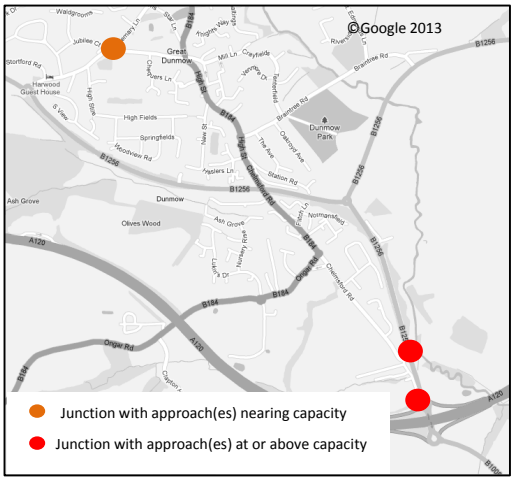


Figure 8-2: 2026 Base + ULP PM Network Operation

8.3 Great Dunmow Mitigation Measures

Initial analysis has indicated that the following two junctions would be significantly impacted upon by the additional ULP development traffic in 2026:

- B1256 / Chelmsford Road (Hoblongs)
- A120 / B1256 Interchange (north roundabout)

Mitigation measures at each of these junctions are discussed in the next sections.

8.3.1 *B1256 / Chelmsford Road (Hoblong's)*

The junction analysis suggests that the additional traffic resulting from the planned developments located in the immediate vicinity of Hoblong's would put significant pressure on the junction, with the Chelmsford Road approach likely to operate at a level well above capacity and with excessive queue lengths.

Signalisation of the junction in its current layout was tested to determine whether this method of operation would be able to provide Chelmsford Road and the junction as a whole with enough capacity. However, the analysis found that such a layout would not provide a workable solution.

The junction and required movements were then reviewed with a view to providing additional capacity and also facilitating all existing business accesses around the junction. It is also needed to improve linkage to the nearby A120 interchange and provide improved crossing facilities for users of the Flitch Way.

A layout was devised by TPA on behalf of the developers of the nearby Chelmsford Road site which incorporated the above requirements through the creation of a gyratory-type junction. This proposed junction layout is illustrated in **Figure 8-3**. This includes the following main features:

- A new section of road between the A120 interchange and Chelmsford Road to allow northbound traffic headed towards Great Dunmow town centre to flow without conflicting with the other traffic movements.
- A two lane B1256 southbound route through to the A120 interchange, which would improve the one lane plus flare approach currently in place.
- A potential Pegasus crossing to provide equestrians, cyclists and pedestrians appropriate facilities to cross the B1256.
- An access into the Travelodge and Hoblong's Industrial area directly from the B1256.

Analysis of this layout has found that the Hoblongs junction would operate within capacity, with minimal queuing. It should be noted that the layout of this junction has repercussions for the layout and operation of the A120 interchange junction, which is discussed in the next section.

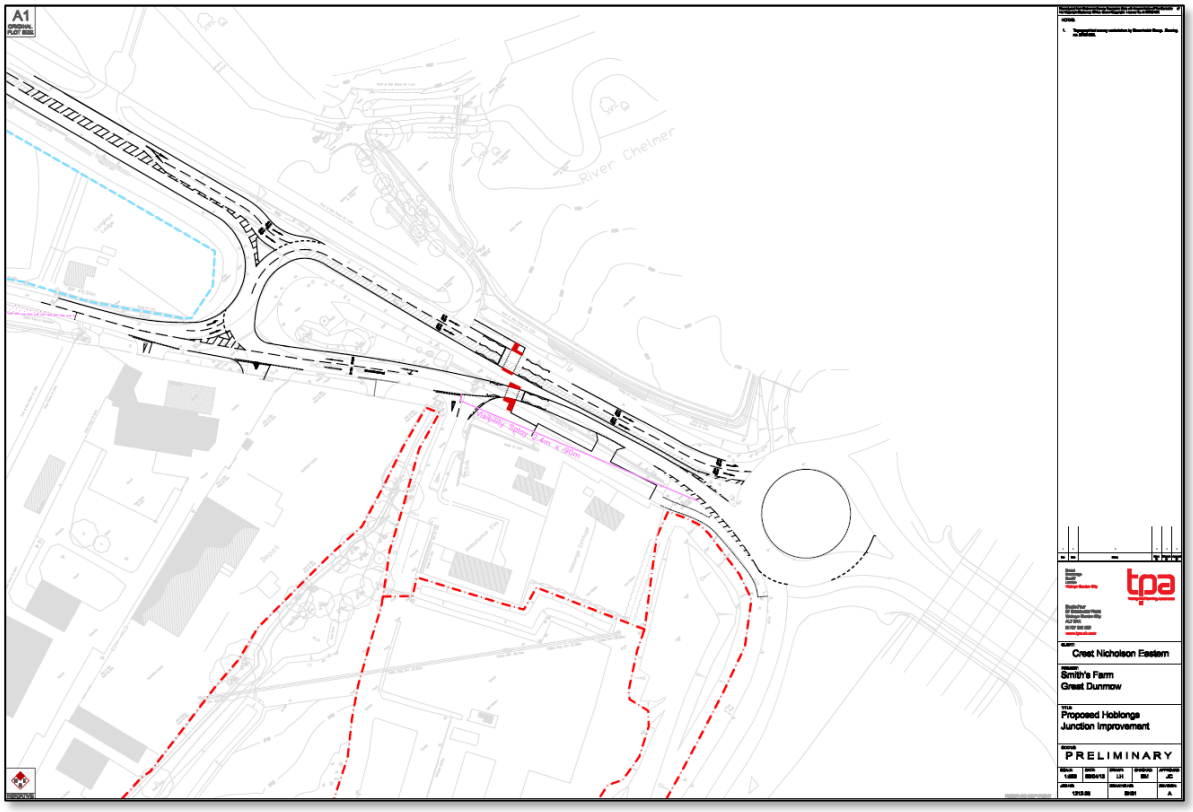


Figure 8-3: Proposed revised layout at Hoblong's junction

8.3.2 A120 / B1256 Interchange (north roundabout)

The revised Hoblong's junction layout requires vehicles wishing to make north to west movements to go further south and travel via the northern element of the A120 interchange, which would itself require a layout revision (shown in **Figure 8-3** above). The northern element of the interchange would, therefore, require alteration to provide for full circulatory movements around it so that north to north u-turns to and from the B1256 can be undertaken. This layout also provides two full lanes on the B1256 approach to the roundabout.

Assessment of the roundabout with the changes implemented has found that it would operate within capacity, with the B1256 approach nearing capacity but with only small levels of queuing.

8.4 Great Dunmow Mitigation Measures Summary Results

Junctions with mitigation measures applied have been reassessed and the results for all junctions summarised in Table 8-2, again with the worst peak hour impact specified. The table also includes the 2026 without mitigation measures results for comparison.

Table 8-2: Final Great Dunmow Junction Capacities with all Mitigation Measures Implemented

	2026		
Junction	**Committed**	**Committed + ULP**	**With Mitigation Measures**
B1256 / Chelmsford Road (Hoblong's)	1	1	0
B184 High Street / Stortford Road / Market Place	0	0	0
Stortford Road / Rosemary Lane	1	1	2
A120 / B1256 Interchange (north roundabout)	0	1	2
A120 / B1256 Interchange (south roundabout)	0	0	0

It is evident that incorporating the mitigation measures would remove all instances of junctions being over capacity. The B1256 approach to the A120 interchange would operate at a level near to capacity in both the AM and PM peak hour, however, the new two lane approach to the interchange would offer a significant benefit over the existing one lane plus flare layout.

Figure 8-4 and Figure 8-5 illustrate those junctions which are still expected to be nearing capacity with the mitigation measures in place.

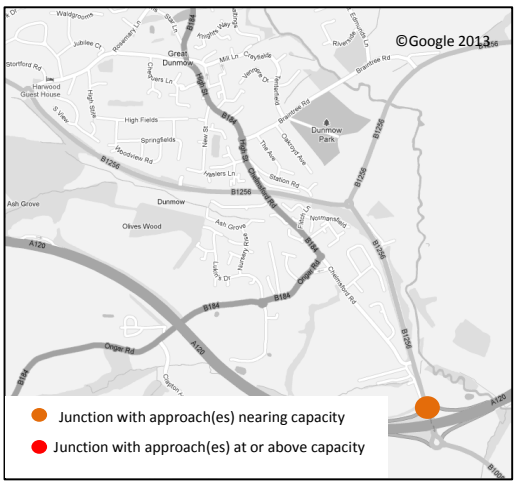


Figure 8-4: 2026 Base + ULP + Mitigation AM

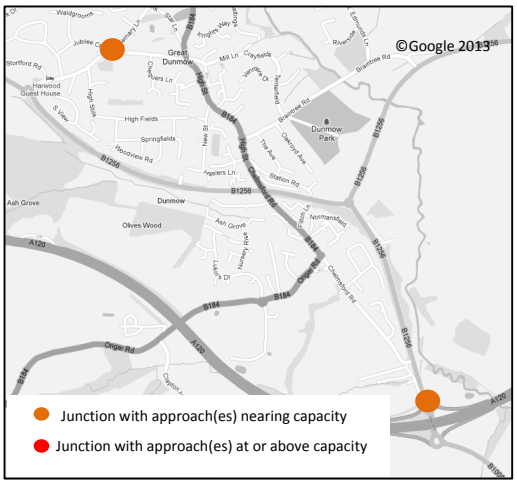


Figure 8-5: 2026 Base + ULP + Mitigation PM

In detail the analysis of each of the junctions in each time period is summarised below in Table 8-3 and Table 8-4, which show the capacity and maximum queue on each arm of each junction in 2026 with Committed Development in place, and again with the ULP developments and all of the proposed highway improvements.

Table 8-3: Summary of Great Dunmow 2026 AM Peak Junction Capacity Results

Approach & Lane		2026 AM + Committed		2026 AM + Committed + ULP		2026 AM + Committed + ULP & All MM		AM Comments on Table 8.2 categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 11 – B1256 / Chelmsford Road (Hoblongs Junction)								**0: No change**
Chelmsford Road	1	0.24	**0**	1.44	**12**	21.5%	**0**	
	2	0.77	**3**	1.40	**59**			
B1256 (north)	1	0.31	**0**	0.40	**1**	61.8%	**3**	
Junction 12 - High Street / Stortford Road / B184 Market Place								**0: No change**
Stortford Rd	1	-	-	-	-	-	-	
B184 Market Pl	1	0.30	**0**	0.35	**1**	0.35	**1**	
	2	0.26	**0**	0.30	**0**	0.30	**0**	
B184 High St	1	0.29	**0**	0.31	**0**	0.31	**0**	
Junction 13 – Stortford Road / Rosemary Lane								**0: No change**
Rosemary Ln	1	0.64	**2**	0.75	**3**	0.75	**3**	
Stortford Rd E	1	0.46	**1**	0.49	**1**	0.49	**1**	
Stortford Rd W	1	0.59	**1**	0.61	**2**	0.61	**2**	
Junction 14 – A120 eastbound off-slip / B1256 / B1008 Interchange (north roundabout)								**2: No change**
B1256 southbound	1	0.86	**6**	1.02	**31**	0.90	**8**	
A120 eastbound off-slip	1	0.44	**1**	0.53	**1**	0.60	**1**	
Junction 15 – A120 / B1256 / B1008 Interchange (south roundabout)								**0: No change**
A120 westbound off-slip	1	0.42	**1**	0.52	**1**	0.52	**1**	
B1008 northbound	1	0.72	**2**	0.83	**4**	0.83	**4**	

Table 8-4: Summary of Great Dunmow 2026 PM Peak Junction Capacity Results

Approach & Lane		2026 PM + Committed		2026 PM + Committed + ULP		2026 PM + Committed + ULP & All MM		PM Comments on Table 8.2 categorisation
		DoS	Q	DoS	Q	DoS	Q	
Junction 11 – B1256 / Chelmsford Road (Hoblongs Junction)								**0: Improvement**
Chelmsford Road	1	0.98	6	1.89	**42**	41.0%	**1**	
	2	0.98	11	1.92	**206**			
B1256 (north)	1	0.12	0	0.16	0	48.9%	2	
Junction 12 - High Street / Stortford Road / B184 Market Place								**0: No change**
Stortford Rd	1	-	-	-	-	-	-	
B184 Market Pl	1	0.31	**0**	0.33	**0**	0.33	**0**	
	2	0.27	**0**	0.29	**0**	0.29	**0**	
B184 High St	1	0.21	**0**	0.29	**0**	0.29	**0**	
Junction 13 – Stortford Road / Rosemary Lane								**2: No change**
Rosemary Ln	1	0.49	**1**	0.51	**1**	0.51	**1**	
Stortford Rd E	1	0.53	**1**	0.56	**1**	0.56	**1**	
Stortford Rd W	1	0.92	**9**	0.96	**14**	0.96	**14**	
Junction 14 – A120 eastbound off-slip / B1256 / B1008 Interchange (north roundabout)								**1: Marginally worse**
B1256 southbound	1	0.81	**4**	1.09	**59**	0.86	**6**	
A120 eastbound off-slip	1	0.62	**2**	0.79	**4**	0.82	**5**	
Junction 15 – A120 / B1256 / B1008 Interchange (south roundabout)								**0: No change**
A120 westbound off-slip	1	0.23	**0**	0.26	**0**	0.26	**0**	
B1008 northbound	1	0.52	**1**	0.59	**1**	0.59	**1**	

The final column for each of the two preceding tables is replicated in Table 8-5 below, so that the overall impact of the ULP proposals can be reviewed. Of the five junctions assessed with all ULP and infrastructure schemes in place, four have been found to be either unchanged over the 2026 with Committed Development scenario, or are expected to have improved capacity as a result of the infrastructure changes proposed. Only one junction is likely to be in a marginally worse condition, the the A120 interchange northern roundabout in the PM time period only.

Table 8-5 Summary of Final Impact of ULP Development Proposals on Gt Dunmow Junction Capacity

	AM situation	PM situation
Junction 11 – B1256 / Chelmsford Rd (Hoblongs Junction)	0: No change	0: Improvement
Junction 12 - High St / Stortford Rd / B184 Market Pl	0: No change	0: No change
Junction 13 – Stortford Rd / Rosemary Ln	0: No change	2: No change
Junction 14 – A120 eastbound off-slip / B1256 / B1008 I/C (north roundabout)	2: No change	1: Marginally worse
Junction 15 – A120 / B1256 / B1008 I/C (south roundabout)	0: No change	0: No change

9 Impact of Potential ULP Sites in Newport

9.1 Link & Junction Overview

The impact of traffic from the proposed ULP sites on the main highway links in Newport has been reviewed in terms of the likely effect on junction operation on the following junctions:

- B1383 Cambridge Road / Bury Water Lane
- B1383 High Street / B1038 Wicken Road
- B1383 High Street / Debden Road

These junctions have been assessed under the traffic flow scenarios in both the AM and PM peak hour:

- 2018 Base + Committed Dev
- 2018 Base + Committed Dev + ULP Dev
- 2026 Base + Committed Dev
- 2026 Base + Committed Dev + ULP Dev

The junction assessments undertaken have found that all the junctions modelled in Newport would operate within capacity in all scenarios and therefore no mitigation measures would be necessary. The full analysis results are included in Appendix H.

10 Impact of Potential ULP Sites on Strategic Road Network

10.1 M11 Junction 8

In order to ensure consistency of approach, a 2012 base LinSig model that has been reviewed and approved by the Highways Agency has been utilised in the evaluation of the impact of the ULP developments on the motorway junction. In addition, mitigation measures which formed part of the G1 planning consent, have been incorporated in the forecast modelling methodology.

The results of the analysis are summarised in Table 10-1, with the analysis files themselves included in Appendix G.

Table 10-1: Junction 8 LinSig results: Existing Layout

Scenario	Total Traffic (PCUs)	PRC (%)	Total Delay (PCU Hrs)	Cycle Time (secs)	Ave Delay per PCU (secs)
AM					
2012 Base	6161	-1.2%	105.50	74	61.65
2018 Base + Committed + G1	6325	-21.8%	177.28	75	100.90
2018 Base + Committed + G1 + ULP	6649	-51.5%	411.03	75	222.55
2026 Base + Committed + G1	6948	-108.3%	667.86	75	346.04
2026 Base + Committed + G1 + ULP	7729	-118.6%	1114.57	75	519.14
PM					
2012 Base	6385	-7.1%	112.47	75	63.41
2018 Base + Committed + G1	6483	-10.0%	115.00	75	63.86
2018 Base + Committed + G1 + ULP	6864	-85.2%	544.81	75	285.74
2026 Base + Committed + G1	7068	-90.2%	597.20	75	304.18
2026 Base + Committed + G1 + ULP	7928	-157.8%	1195.07	75	542.67

It can be seen that the junction is not expected to operate satisfactorily with the existing layout. As is also evident in the table, the existing junction is already operating at capacity in the 2012 Base year and this situation rapidly deteriorates in the future years.

The mitigation measures, which primarily involve changes to the lane markings to more readily address movements within the circulatory area, do not, however, resolve the junction capacity issues. The results of the analysis of the G1 mitigation layout are summarised in Table 10-2.

Table 10-2: Junction 8 LinSig results: G1 Mitigation Layout

Scenario	Total Traffic (PCUs)	PRC (%)	Total Delay (PCU Hrs)	Cycle Time (secs)	Ave Delay per PCU (secs)
AM					
2012 Base	6161	-0.4%	105.20	75	61.47
2018 Base + Committed + G1	6325	-57.9%	312.34	75	177.77
2018 Base + Committed + G1 + ULP	6649	-75.3%	387.83	75	209.98
2026 Base + Committed + G1	6948	-60.3%	355.88	75	184.39
2026 Base + Committed + G1 + ULP	7729	-197.0%	991.24	75	461.70
PM					
2012 Base	6385	-26.8%	174.70	75	98.50
2018 Base + Committed + G1	6483	-53.3%	352.67	75	195.84
2018 Base + Committed + G1 + ULP	6864	-57.1%	428.44	75	224.71
2026 Base + Committed + G1	7068	-51.9%	445.40	75	226.86
2026 Base + Committed + G1 + ULP	7928	-102.5	853.99	75	387.79

In the AM peak, the mitigation results in a further reduction in junction capacity and increased delay; this appears to be partly the result of the change in lane marking at the M11 northbound off-slip, which provides more capacity to a lane with lower demand. For the AM period, the mitigation results in slightly less delay in 2026 with all development, but the practical reserve capacity is further reduced.

In the PM peak while the mitigation results in an 'improved' negative PRC, the overall impact on the junction in terms of average delay per PCU is still significantly higher than the existing situation.

It should be noted that the junction is expected to be over-capacity in both time periods with the Committed Development and G1 at 35mppa in 2026. The additional traffic associated with the ULP proposals result in a worsening of the situation.

Additional mitigation measures could, however, be considered in order to improve the operation of the junction. Consideration could be given, for instance, to re-modelling the motorway service area layout to stop up the existing service area egress onto the roundabout and include a relocated egress from the site via a new signalised junction on the A120 between Junction 8 and the roundabout with A1250 Dunmow Road. Such a measure would remove a signal node from Junction 8, thus reducing delay at the interchange.

Another measure would be to widen the A120 eastbound approach to the junction from two lanes plus a short flare to three lanes plus a long flare, of about 100m, to serve traffic headed for the M11 northbound.

Also, as part of the desire to improve the operation of the A120 eastbound approach, a minor shift south in the position of the A120 westbound exit from the junction could be undertaken to allow for a larger amount of queuing space on the circulatory carriageway at the intersection with the A120 eastbound approach.

A sketch of these possible mitigation measures is shown below in **Figure 10-1**, and a larger version of the sketch presented in Appendix I.

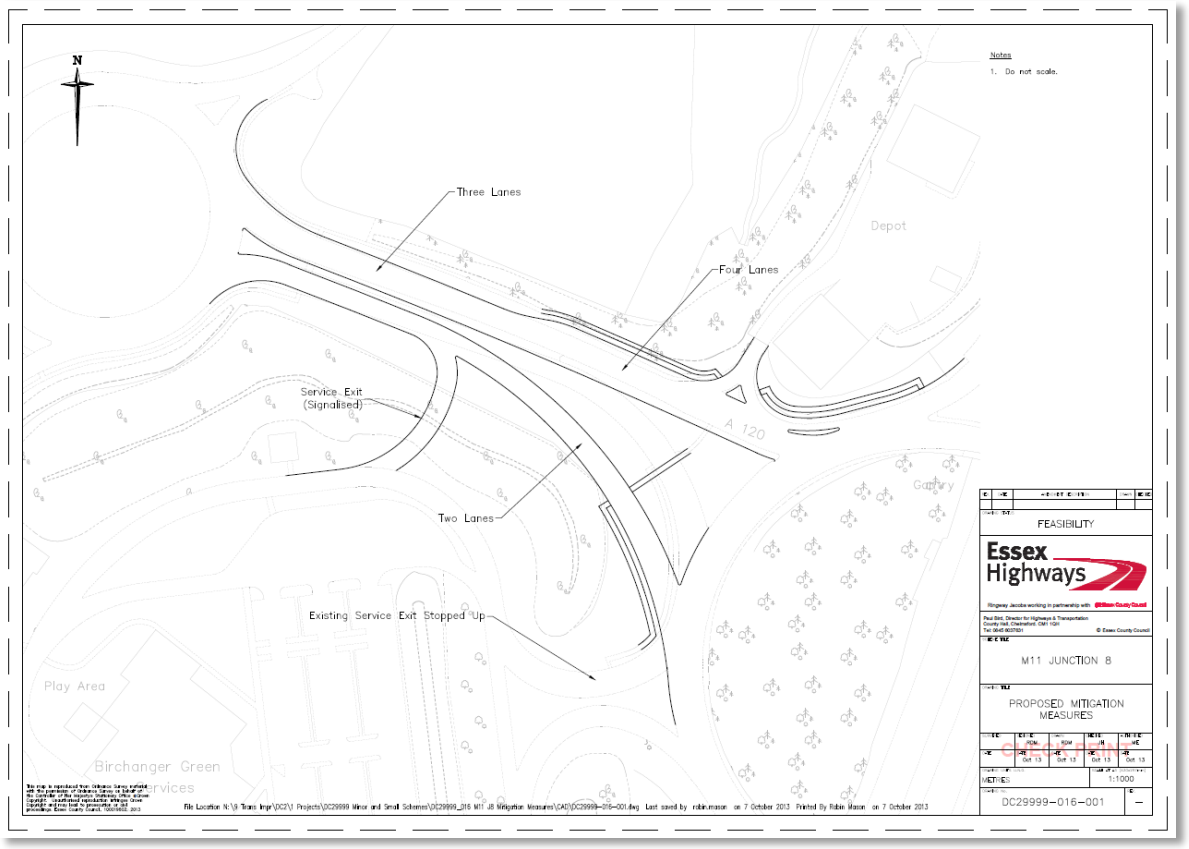


Figure 10-1: Possible Additional Mitigation Measures at Junction 8

Initial LinSig assessments have been undertaken of the junction with these mitigation measures in place and the results have been summarised below in Table 10-3. The full results are included within Appendix G.

Table 10-3: Junction 8 LinSig results: Additional Mitigation Layout

Scenario	Total Traffic (PCUs)	PRC (%)	Total Delay (PCU Hrs)	Cycle Time (secs)	Ave Delay per PCU (secs)
AM					
2012 Base	6161	6.5%	91.40	75	53.41
2018 Base + Committed + G1	6325	-0.3%	96.78	75	55.08
2018 Base + Committed + G1 + ULP	6649	-5.2%	117.83	75	63.80
2026 Base + Committed + G1	6948	1.9%	104.69	75	54.24
2026 Base + Committed + G1 + ULP	7729	-5.8%	154.27	75	71.86
PM					
2012 Base	6385	1.7%	91.38	75	51.52
2018 Base + Committed + G1	6483	8.9%	85.49	75	47.47
2018 Base + Committed + G1 + ULP	6864	4.0%	101.29	75	53.12
2026 Base + Committed + G1	7068	0.4%	111.64	75	56.86
2026 Base + Committed + G1 + ULP	7928	-7.9%	171.27	75	77.77

The results suggest that the additional mitigation measures would increase capacity and reduce overall delay at the junction in each of the traffic flow scenarios. The A120 eastbound approach in particular would benefit significantly from the measures included.

It should be noted that this evaluation is based on TEMPRO growth, G1 permitted airport development and the committed and proposed UDC Local Plan growth. No specific allowance has been made for development in East Herts District, over and above that included in TEMPRO.

11 Construction Design and Management (CDM)

We have undertaken our designer's responsibilities when preparing the initial junction mitigation designs. However, this is a feasibility report and any design work has been initial and preliminary. The degree that we have considered CDM is commensurate with the information we have had available at this preliminary stage of the project.

Design work has been based on OS mapping only – no detailed land or structural surveys have been carried out and no information has been obtained on existing ground conditions or underground services.

At this initial stage of design and based on the information available, it is considered that potential hazards may arise from, in particular:

- Existing buildings
- Previous/existing land
- Previous/existing structures
- Roadways
- Railways
- Watercourse
- Access Restrictions
- Adjacent properties
- Concurrent site activites

If any of the schemes in the report are to be taken forward to more detailed design, a more thorough assessment of hazards and risks will be required. This may necessitate revision to the initial designs shown.

12 Summary and Conclusions

12.1 Summary

Uttlesford District Council has identified potential sites in Saffron Walden, Great Dunmow and Newport together with several other areas of the district as potential sites for ULP development allocation up to 2026. In order to ascertain whether these sites can be accommodated on the local road networks this study has been undertaken.

The total dwellings proposed are set out in Table 12-1 which combines information from tables in Section 2 to indicate the total number of committed and proposed housing units considered in this report. In addition to housing, the employment and non-residential land use developments, including major sites at Land north east of Bury Lodge Lane, Little Chesterford and Gaunts End, Elsenham, as well as passengers associated with Stansted Airport have been included in the assessment, as set out in Table 2-7.

Table 12-1: Plan Period Housing Development

Development	No. of Dwellings		
	2012-2018	2019-2026	2012-2026
Committed Housing	2,099	810	**2,909**
ULP Housing	879	2,145	**3,024**
Total Housing	**2,978**	**2,955**	**5,933**

As set out in Section 3, the key study areas are Saffron Walden, Great Dunmow, and Newport, together with the M11 Junction 8. Base year traffic flows have been established for 2012 from observed traffic flows at the key junctions in each study area and the future year background traffic flows have been calculated for 2018 and 2026 by applying growth as set out in Section 4. The level of trips generated by each land use type and development site has then calculated as set out in Section 5. The assignment and distribution of the development traffic was based primarily on 2001 journey to work distribution. In this way the committed and proposed ULP development site traffic was added to the network.

Within each study area each identified junction has been evaluated, using the methodology detailed in Section 6, initially in the 2012 Base year to ensure that the junction modelling was representative of current conditions. Then each junction was assessed under a series of future year scenarios:

2018 with Committed Development
2018 with Committed+ULP Development
2026 with Committed Development
2026 with Committed+ULP Development

In Saffron Walden, further tests were undertaken for 2026 to evaluate the impact of a link road on the eastern side of the town between Thaxted Road and Radwinter Road.

The capacity assessment results undertaken for each junction under each scenario and for each study area have been summarised in Section 7, 8, 9 and 10. The findings for each study area are set out below.

Saffron Walden

A total of eleven junctions were assessed within the Saffron Walden study area. As shown in **Table 7-1**, a number of them were anticipated to be over-capacity in 2026 with already committed development in place, a situation which would be exacerbated with the addition of ULP development traffic.

The proposed link road between Thaxted Road and Radwinter Road would help to relieve congestion at the Thaxted Road/Radwinter Road and High Street/Audley End Road junctions. However, this would lead to the junctions on Peaslands Road, Mount Pleasant Road and Borough Lane experiencing an increased flow as traffic re-routes via the south of the town centre.

Mitigation measures were also considered to help further relieve delay at junctions, particularly those within the Air Quality Management Area (AQMA). The first of these measures included the implementation of a northbound traffic restriction on Thaxted Road north of the junction with Peaslands Road, in order to reduce the flow on the Thaxted Road approach to the junction with Radwinter Road. The second measure was a similar northbound traffic restriction on Debden Road at the junction with Mount Pleasant Road and Borough Lane.

These mitigation measures, together with the eastern link road, were evaluated, and the '2026 with Committed and ULP development' scenario compared with the '2026 with Committed development' scenario. As can be seen in **Table 7-7**, it was found that all but two of the eleven junctions assessed either experienced no change in capacity in 2026 with the ULP in place, or had improved capacity levels. The two junctions which would be expected to have slightly less capacity with the ULP development in place are:

- Mount Pleasant Road / Debden Road
- B1052 Newport Road / Audley End Road

The improvements identified to mitigate the impact of the development traffic, with associated Level 1 cost estimates 2013 prices, are summarised below:

- B184 Thaxted Road / B1053 Radwinter Road: a revised priority junction layout with East Street and Radwinter Road forming the major carriageway and Thaxted Road as the minor route. Preliminary cost (including STATS; no land required): **£18,500**

- B184 Thaxted Road / Peaslands Road: layout involving signalisation of all approaches. Preliminary cost (including STATS; no land required): **£207,000**

- Mount Pleasant Road / Debden Road: Signalisation of the junction, with demand management software to minimise delays on Mount Pleasant Road and Debden Road south. It is understood that signalisation of this junction is a planning obligation of a recent planning approval and therefore no costing is required.

- B1052 London Road / Debden Road: priority junction layout. Preliminary cost (including STATS; no land required): **£19,000**

- B184 High Street / B184 George Street: remove parking along High Street south of the junction, to allow two full approach lanes. Relocate pelican crossing further north. Preliminary cost (including STATS; no land required): **£260,300**

- B1052 London Road / Borough Lane: signalisation, one-way from Borough Lane to enable two-lane approach.
  B1052 Newport Road / Audley End Road: priority junction arrangement given close proximity to Borough Lane junction.
  Preliminary cost of two junction works combined (including STATS; no land required): **£473,300.**

Great Dunmow

As set out in **Table 8-5** only one junction is expected to have slightly less capacity in 2026 with the ULP development in place, the B1256 / A120 Interchange northern roundabout.

The mitigation measure at the Hoblong's junction (as devised by TPA consultants on behalf of the developers of land west of Chelmsford Road) involves a major rearrangement of the junction. The measure would enable northbound traffic from the A120 interchange to head into Great Dunmow via Chelmsford Road without the need to turn into a minor road. It would also incorporate a two lane route running southbound from the junction to the A120 interchange, thus providing more capacity on that approach (costing to be advised).

Newport

No junctions were found to be over capacity in the 2026 with ULP development flow scenario.

M11 Junction 8

The motorway junction has been modelled with its existing layout and the layout that includes mitigation measures as specified in the G1 planning approval. The mitigation measures do not result in significant improvements in the operation of the junction and it would be expected to experience significant delays in 2026 with committed and G1 development in place. The addition of the ULP development results in a worsening situation.

Additional mitigation measures at the junction have consequently been considered and assessed within a preliminary sketch and assessment. The measures considered include:

- The relocation of the service area site egress from its current position to a newly created junction with the A120 west of Junction 8. This would enable a signal node to be removed from the circulatory carriageway.

- The widening of the A120 eastbound approach to the junction from two lanes plus a short flare (which is used for M11 northbound headed traffic) to three lanes plus a 100m long flare, which is effectively a four lane approach.

- A minor shift south in the positioning of the A120 westbound exit from the junction to allow for a larger amount of queuing space on the circulatory carriageway at the intersection with the A120 eastbound approach.

A preliminary cost estimate of the above mentioned works has arrived at **£2.86 million**. The junction assessment results suggest that the mitigation measures would reduce delay at the junction, with significant benefits likely on the A120 eastbound approach.

12.2 Conclusions

Having modelled the traffic impact of the proposed ULP sites and identified mitigation measures we have come to the following conclusions:

Saffron Walden

- The addition of the ULP traffic to the network would cause two junctions to have less capacity in 2026.

- The implementation of a link road between Thaxted Road and Radwinter Road would remove some traffic and, as a result, reduce delay at the junction of Thaxted Road, Radwinter Road and East Street, but would consequently add traffic onto the route south of the town centre including Peaslands Road, Mount Pleasant Road and Borough Lane, placing junctions on this route near or at capacity.

- The traffic restriction on Thaxted Road at its junction with Peaslands Road would significantly reduce congestion at the Thaxted Road / Radwinter Road junction but further encourage reassignment of traffic on to Peaslands Road, Mount Pleasant Road and Borough Lane, which would be likely to result in increased queues on certain approaches to these junctions.

- A similar traffic restriction for Debden Road at the junction with Mount Pleasant Road would reduce overall congestion at the junction of Debden Road with London Road, but lead to additional pressure at the junction of Borough Lane and London Road.

- The mitigation measures tested at specific junctions, with the exception of the proposed priority arrangement at Newport Road and Audley End Road, were shown to provide a 'nil detriment' situation or better with significant benefits over the existing layouts in the majority of cases, with the exception of three junctions.

The analysis suggests that if all the above measures were implemented, some of the key junctions in the Saffron Walden road network would be likely to accommodate the additional traffic resulting from the ULP developments. However, three junctions in the town would continue to operate over capacity, and it has not been possible to identify further enhancements due to highway land constraints. These are:

- High Street/George Street
- High Street/Church Street

- Mount Pleasant Road/Debden Road

In addition to the identified mitigation measures, it is recommended that demand management methods are investigated in order to reduce overall traffic flows in the town. Activities such as travel planning for both old and new employment and school developments, together with personal travel planning at existing and proposed residential developments would help to improve awareness of alternative travel modes and encourage a shift towards non-car modes of travel and reduce traffic congestion in the town.

Great Dunmow

- The addition of the ULP traffic to the network would result in slightly reduced capacity at one junction.
- A revised layout which combines the Hoblong's junction and the northern roundabout at the A120 interchange was found to operate within capacity in the 2026 with ULP scenario.

The analysis indicates that the proposed revised layout at Hoblong's and the completion of the western bypass (Woodside Way) would provide suitable mitigation against the impact of the future year development traffic in the town.

Newport

- No junctions were found to be over capacity as a result of ULP developments in Newport.

M11 Junction 8

- Modelling indicates that the junction would be expected to be over capacity in 2026 without ULP development. Consideration has been given to possible mitigation measures; assessments of these showed that the operation of the junction would be improved with these in place.

It should be noted that the analyses contained in this report have been based on the committed and ULP development information set out in Section 2. Any changes in policy or any submitted planning applications or approvals which may have been proposed since this information was agreed will not have been taken into account.