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TRAFFIC IMPACT ASSESSMENT-SUMMARY REPORT

MARCH 2016

Traffic Impact Assessment – Summary Report

Ashford Local Plan Review

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Contents

1 Introduction

1.1 Background

1.1.1 Amey have been commissioned by Kent County Council (KCC), in partnership with Ashford Borough Council (ABC), to assess the impact of major Local Plan allocation sites to the north of Ashford town centre. This report aims to assess the impact of two sites (Kennington East and Eureka) on the local highway network.

1.1.2 Amey has undertaken a range of activities in order to identify the existing problems and issues experienced at the main junctions within the area. The activities undertaken are as follows:

- Commission traffic surveys and analysis of current traffic conditions;
- Analysis of junction turning count data and queue length data; and
- Undertake forecast junction capacity assessments of key junctions for benchmarking.

1.1.3 The development information and trip generation methodology has been agreed by KCC Strategic Transport and Development Officer, James Hammond and Simon Cole, Policy Manager at ABC.

1.1.4 Junctions along the A28/A2042 Canterbury Road corridor from Simone Weil Avenue to A2070 Willesborough Road have been assessed under the proposed traffic generation of the Kennington East development and the A251 Trinity Road from Rutherford Road to A251 Faversham Road has been assessed under the proposed traffic generation of the Eureka development.

1.1.5 This report sets out the methodologies adopted to undertake the assessments outlined above and provides a summary of the outputs. These findings can be used to identify potential mitigation measures if required.

2 Current Traffic Conditions

2.1 Kennington Site

2.1.1 The potential Local Plan allocation site of Kennington is located to the north of Ashford town centre and the M20 Motorway and is adjacent to the junction of A28 Canterbury Rd/A2070 Willesborough Rd. It is anticipated that the site would be accessed off of the A2070 Willesborough Rd and the most significant traffic impact would be on the A28 corridor towards Ashford.

2.1.2 The current traffic conditions at key junctions on the highway network surrounding the potential Kennington allocation site have been captured through the collection of junction turning count and queue length surveys. The junctions were identified during a site drive-through undertaken on Friday 29/05/15 with KCC and ABC officers.

2.1.3 The surveyed junctions are:

Junction 1 – A2042 Canterbury Road/ A28 Simone Weil Avenue;

Junction 2 – A2042 Canterbury Road/ Bybrook Road;

Junction 3 – A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way;

Junction 4 – A28 Canterbury Road/ Willesborough Road;

Figure 1 shows the locations of these surveys.

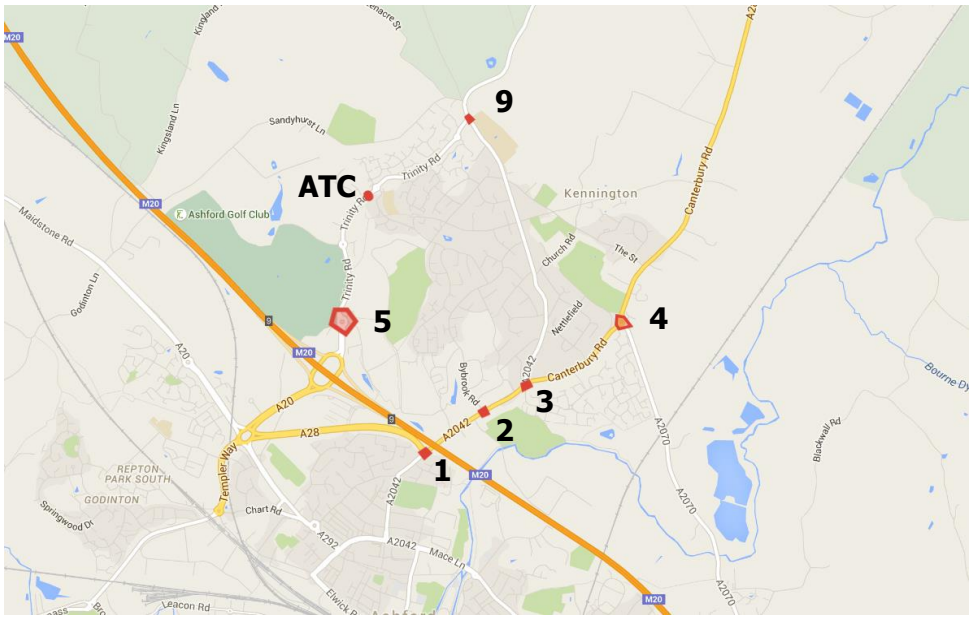


Figure 1: Junction Turning Count and Automatic Traffic Count Survey Locations

2.1.4 Junction Turning Count (JTC) Surveys were carried out on Wednesday 23rd September 2015 between the hours of 07:00 – 10:00 and 16:00 – 19:00. The JTC data is intended to provide a snapshot of existing traffic conditions. For the purposes of this study, the peak hours to be studied are 08:00 – 09:00 and 17:00 – 18:00. The peak hour junction turning count data is shown in the tables below for each of junctions.

2.1.5 Queue length surveys were also undertaken on the approaches to the junctions during the same time period. The maximum queue length on each of the approaches to the junction were recorded in car length equivalents (i.e. HGVs and buses are 2 car lengths) at 5 minute intervals during the survey period to provide an indication of the existing delay and queueing situation at each junction. A summary of the peak hour queues are also shown in the tables below.

Junction 1 – A2042 Canterbury Road/ A28 Simone Weil Avenue

2.1.6 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction is located at the southern edge of the study area, north of Ashford town centre. The junction is a three arm signalised arrangement with formal pedestrian crossing points across the A28 Simone Weil Avenue and A2042 Canterbury Road west arms.

Junction Turning Counts

AM Peak				
Junction Arm	**A2042 Canterbury Rd (E)**	**A2042 Canterbury Rd (W)**	**A28 Simone Weil Ave**	**Total**
A2042 Canterbury Rd (E)	0	885	326	**1211**
A2042 Canterbury Rd (W)	507	0	197	**704**
A28 Simone Weil Ave	242	129	0	**371**
Total	**749**	**1014**	**523**	**2286**
PM Peak				
Junction Arm	**A2042 Canterbury Rd (E)**	**A2042 Canterbury Rd (W)**	**A28 Simone Weil Ave**	**Total**
A2042 Canterbury Rd (E)	0	559	274	**833**
A2042 Canterbury Rd (W)	703	0	220	**923**
A28 Simone Weil Ave	386	211	1	**598**
Total	**1089**	**770**	**495**	**2354**

Table 1: Origin – Destination Traffic Flows

2.1.7 Table 1: Origin – Destination Traffic FlowsTable 1 indicates that the PM peak is the busiest period but both the AM and PM peak periods observe a similar level of traffic through the junction. In the AM peak, the dominant traffic flow comes from the A2 Canterbury Road heading west towards Ashford town centre. This is nearly double the flow heading away from town centre. During the PM peak, the dominant flow is less significant with most traffic heading away from Ashford town centre. Travelling in the opposite direction, towards Ashford town centre, there are nearly 100 fewer vehicles. This makes the opposing flows much more equal than in the AM peak.

2.1.8 From A28 Canterbury Road, just over one quarter of the flow turns into Simone Weil Avenue in the AM peak and approximately one third in the PM peak. Coming from Canterbury Road west just under 30% of vehicles turn into Simone Weil Avenue in the AM peak and rises to 35% in the PM peak.

2.1.9 In both the AM and PM peaks there is much lower flow heading out of Simone Weil Avenue and in both peaks 65% of vehicles head towards A28 Canterbury Road (away from the town centre).

Observed Queue Lengths

2.1.10 Table 2 displays the maximum length of queues (in vehicles) observed during the surveyed period at this junction. In general the data suggests that peak hour queue lengths at this junction are moderate with a maximum queue length of 12 vehicles in the AM peak and 20 vehicles in the PM peak.

2.1.11 The A2042 Canterbury Road (W) and A28 Simone Weil Avenue arms observe marginally longer queues than the A2042 Canterbury Road (E) arm during both peaks.

2.1.12 The levels of queueing on all arms of the junction are fairly consistent and sustained throughout the peak periods, with no obvious spikes in the number of queueing vehicles.

Time	A2042 Canterbury Rd (E)		A2042 Canterbury Rd (W)		A28 Simone Weil Ave	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:05	5	7	3	7	4	5
08:10	8	5	1	10	5	3
08:15	8	7	3	10	8	5
08:20	9	3	2	9	7	6
08:25	9	3	2	2	8	4
08:30	3	5	3	8	6	6
08:35	6	6	2	11	12	7
08:40	8	9	2	5	8	4
08:45	7	4	0	8	8	5
08:50	8	6	2	7	7	5
08:55	7	4	3	4	7	3
09:00	7	5	2	4	5	4
Total	**85**	**64**	**25**	**85**	**85**	**57**
17:05	8	8	3	6	8	11
17:10	10	3	3	11	8	8
17:15	12	6	1	12	14	8
17:20	10	12	2	14	8	9
17:25	10	8	1	16	13	11
17:30	6	7	2	10	12	13
17:35	10	7	2	12	18	10
17:40	8	7	2	14	15	8
17:45	8	8	3	10	20	8
17:50	6	7	2	12	11	5
17:55	10	10	1	14	18	10
18:00	9	5	1	12	13	9
Total	**107**	**88**	**23**	**143**	**158**	**110**

Table 2: Weekday AM & PM Peak Period Queue Lengths (Veh)

Current Junction Operation Rating

2.1.13 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.1.14 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 2354 vehicles per hour	**A**	Max queue = 20 vehicles	**A**

Junction 2 – A2042 Canterbury Road/ Bybrook Road

2.1.15 The A2042 Canterbury Road/ Bybrook Road junction is approximately 450 metres north east of the A2042 Canterbury Road/ Simone Weil Avenue junction, heading further from Ashford town centre. Like the previous junction, it is a three arm signalised arrangement with a formal staggered pedestrian crossing point on the A28 Canterbury Road south arm and an informal crossing across the Bybrook Road arm of the junction. There is a bus lane on A28 Canterbury Road that heads south west towards Ashford town centre and begins on the approach to this junction. In both directions there are cycle lanes.

Junction Turning Counts

AM Peak				
Junction Arm	**A2042 Canterbury Rd (E)**	**A2042 Canterbury Rd (W)**	**Bybrook Rd**	**Total**
A2042 Canterbury Rd (E)	0	867	10	**877**
A2042 Canterbury Rd (W)	586	0	104	**690**
Bybrook Rd	43	324	0	**367**
Total	**629**	**1191**	**114**	**1934**
PM Peak				
Junction Arm	**A2042 Canterbury Rd (E)**	**A2042 Canterbury Rd (W)**	**Bybrook Rd**	**Total**
A2042 Canterbury Rd (E)	0	615	55	**670**
A2042 Canterbury Rd (W)	798	1	242	**1041**
Bybrook Rd	27	178	0	**205**
Total	**825**	**794**	**297**	**1916**

Table 3: Origin – Destination Traffic Flows

2.1.16 Table 3 indicates that the AM peak on the surveyed day was slightly busier than the PM peak however they are fairly similar in terms of volumes of traffic. Bybrook Road has less than 20% of the total flow at this junction in the AM peak and just over 10% in the PM peak, with the majority of traffic heading towards Ashford town centre on

A2042 Canterbury Road west. More vehicles turn into Bybrook Road from A2042 Canterbury Road west, with 15% in the AM peak and 23% in the PM peak.

2.1.17 In the AM peak, the largest traffic flow heads for A2042 Canterbury Road west, however, in the PM peak the flow is much more balanced between Canterbury Road east and west.

Observed Queue Lengths

Time	A2042 Canterbury Rd (E)		A2042 Canterbury Rd (W)		Bybrook Rd
	Lane 1	Lane 2	Lane 1	Lane 2	
08:05	0	12	0	14	9
08:10	0	11	0	8	5
08:15	1	10	0	14	13
08:20	0	11	0	12	10
08:25	0	12	0	10	14
08:30	0	14	0	13	14
08:35	0	15	0	10	7
08:40	0	14	0	10	15
08:45	0	16	0	9	11
08:50	0	13	0	6	8
08:55	0	9	0	4	9
09:00	0	10	0	10	5
Total	**1**	**147**	**0**	**120**	**120**
17:05	1	4	0	6	5
17:10	0	8	0	12	4
17:15	0	11	0	10	6
17:20	0	5	0	13	8
17:25	0	3	0	8	4
17:30	0	8	0	14	5
17:35	0	11	0	18	9
17:40	0	9	0	19	6
17:45	0	5	0	14	6
17:50	0	13	0	14	4
17:55	0	16	0	15	6
18:00	0	13	0	9	4
Total	**1**	**106**	**0**	**152**	**67**

Table 4: Weekday AM & PM Peak Period Queue Lengths (Veh)

2.1.18 Table 4 shows that the queueing is fairly consistent on each arm of this junction during the surveyed peak hour, and there are no significant spikes in the number of queueing vehicles. The queueing at this junction is moderate with a maximum queue length of 16 vehicles in the AM peak and 19 vehicles in the PM peak.

2.1.19 The A2042 Canterbury Road (E) arm has longer queues in the AM peak while A2042 Canterbury Road (W) has longer queues in the PM peak which, in total, is over double the maximum queue length on Bybrook Road.

Current Junction Operation Rating

2.1.20 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.1.21 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 1934 vehicles per hour	**G**	Max queue = 19 vehicles	**A**

Junction 3 – A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way

2.1.22 The A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way junction is approximately 350 metres north of the A2042 Canterbury Road/ Bybrook Road junction, further away from Ashford town centre. The junction is a signalised crossroads arrangement with formal pedestrian crossing points on all arms apart from A28 Canterbury Road. Cycle lanes are present on the A2042 Faversham Road arm and A2042 Canterbury Road arm.

Junction Turning Counts

AM Peak					
Junction Arm	**A2042 Faversham Rd**	**A28 Canterbury Rd (E)**	**George Williams Way**	**A2042 Canterbury Rd (W)**	**Total**
A2042 Faversham Rd	0	119	27	355	**501**
A28 Canterbury Rd (E)	43	0	5	359	**407**
George Williams Way	89	6	0	158	**253**
A2042 Canterbury Rd (W)	261	320	43	0	**624**
Total	**393**	**445**	**75**	**872**	**1785**
PM Peak					
Junction Arm	**A2042 Faversham Rd**	**A28 Canterbury Rd**	**George Williams Way**	**A2042 Canterbury Rd**	**Total**
A2042 Faversham Rd	0	73	54	223	**350**
A28 Canterbury Rd	106	0	3	388	**497**
George Williams Way	29	5	0	62	**96**
A2042 Canterbury Rd	306	384	124	0	**814**
Total	**441**	**462**	**181**	**673**	**1757**

Table 5: Origin – Destination Traffic Flows

2.1.23 Table 5 demonstrates that the AM peak hour on the surveyed day was slightly busier than the PM peak however the flows were very similar. In the PM peak the largest traffic flow came from A2042 Canterbury Road (heading away from Ashford town centre) whereas in the AM peak the variance in flows was not as significant, however, they were still largest on this arm. Turning movements from this arm remain fairly consistent in both peaks with 42% and 51% turning to A2042 Faversham Road and A28 Canterbury Road respectively in the AM peak and 38% and 47% to A2042 Faversham Road and A28 Canterbury Road respectively in the PM peak.

2.1.24 In both the AM and PM peaks, the largest flow heads towards A2042 Canterbury Road. The flows heading towards A2042 Faversham Road and A28 Canterbury Road are fairly equal in both peak periods whereas there is more than double the amount of vehicles turning into George Williams Way in the PM peak.

Observed Queue Lengths

Time	A2042 Faversham Rd		A28 Canterbury Rd	George William Way		A2042 Canterbury Rd		
	Lane 1	Lane 2		Lane 1	Lane 2	Lane 1	Lane 2	Lane 3
08:05	5	9	8	4	3	4	11	1
08:10	5	9	8	5	3	6	10	2
08:15	9	8	9	6	7	1	6	1
08:20	8	10	10	7	4	2	9	2
08:25	3	12	13	5	4	3	10	4
08:30	3	8	10	3	3	5	4	2
08:35	3	8	8	6	4	3	8	3
08:40	3	9	9	4	4	4	13	1
08:45	7	17	8	3	4	4	5	1
08:50	6	7	6	1	3	3	10	3
08:55	4	11	6	1	4	3	9	2
09:00	3	9	6	3	1	3	3	2
Total	**59**	**117**	**101**	**48**	**44**	**41**	**98**	**24**
17:05	3	5	6	3	1	5	6	3
17:10	5	6	6	2	0	3	7	3
17:15	4	7	10	2	0	3	6	3
17:20	6	8	7	3	1	8	7	5
17:25	2	6	6	2	1	3	7	4
17:30	2	6	5	2	1	2	6	5
17:35	4	6	10	2	3	2	8	1
17:40	5	6	4	4	2	4	14	6
17:45	2	7	4	3	1	4	6	4
17:50	2	5	6	1	3	3	6	3
17:55	3	4	5	2	4	6	4	2
18:00	3	7	5	1	1	4	5	5
Total	**41**	**73**	**74**	**27**	**18**	**47**	**82**	**44**

Table 6: Weekday AM & PM Peak Period Queue Lengths (Veh)

2.1.25 Table 6 demonstrates that there is moderate queueing on all arms of this junction with the maximum queue length of 17 vehicles on the A2042 Faversham Road in the AM peak. In the PM peak queues are a lot shorter but the longest queue of 14 vehicles occurs on A2042 Canterbury Road. The queueing on all arms is fairly consistent in the peak periods.

Current Junction Operation Rating

2.1.26 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.1.27 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 1785 vehicles per hour	**G**	Max queue = 17 vehicles	**A**

Junction 4 – A28 Canterbury Road/ Willesborough Road

2.1.28 The A28 Canterbury Road/ Willesborough Road junction is located approximately 750 metres further north east from the A28 Canterbury Road/ A2042 Faversham Road junction away from Ashford town centre. The junction is a four arm priority roundabout with no formal pedestrian crossing facilities provided across any arm. There is direct access from the roundabout to a hotel.

2.1.29 Table 7 demonstrates that the PM peak is the busiest period however the AM peak does not have significantly lower traffic flows. In the AM peak the most traffic comes from A28 Canterbury Road north and 60% heads to Willsborough Road and 40% to A28 Canterbury Road south. Of those coming from Willsborough Road, 73% turn to A28 Canterbury Road north and 25% to A28 Canterbury Road south. From Canterbury Road south, 57% head towards A28 Canterbury Road north and 43% to Willsborough Road.

Junction Turning Counts

AM Peak					
Junction Arm	**A28 Canterbury Rd (N)**	**Hotel Access**	**Willesborough Rd**	**A28 Canterbury Rd (S)**	**Total**
A28 Canterbury Rd (N)	0	2	441	296	**739**
Hotel Access	6	0	2	3	**11**
Willesborough Rd	404	3	4	140	**551**
A28 Canterbury Rd (S)	301	1	225	0	**527**
Total	**711**	**6**	**672**	**439**	**1828**
PM Peak					
Junction Arm	**A28 Canterbury Road (N)**	**Hotel Access**	**Willesborough Road**	**A28 Canterbury Road (S)**	**Total**
A28 Canterbury Road (N)	1	9	354	294	**658**
Hotel Access	3	0	3	2	**8**
Willesborough Road	409	4	0	302	**715**
A28 Canterbury Road (S)	300	6	176	8	**490**
Total	**713**	**19**	**533**	**606**	**1871**

Table 7: Origin – Destination Traffic Flows

2.1.30 In the PM peak most of the traffic comes from Willesborough Road and with only slightly less flows A28 Canterbury Road north. From Canterbury Road north just over 50% of the flows head to Willesborough Road and from Willesborough Road nearly 60% heads to Canterbury Road north. From Canterbury Road south over 60% of the flow goes to Canterbury Road north. In both peaks the hotel access road has really little significance at this junction.

Observed Queue Lengths

2.1.31 Table 8 clearly shows that there is minimal queueing at this junction in both the AM and PM peak periods. The largest queue of 5 vehicles occurs on Canterbury Road (N) Lane 1 at 08:05, Lane 2 at 08:15 and Willesborough Road Lane 2 at 08:35 but the majority of the time queues are one or two vehicles only.

Time	A28 Canterbury Road (N)		Hotel Access	Willesborough Road		A28 Canterbury Road (S)	
	Lane 1	Lane 2		Lane 1	Lane 2	Lane 1	Lane 2
08:05	5	1	1	0	3	4	2
08:10	1	2	0	0	4	1	3
08:15	1	5	0	1	1	3	2
08:20	1	1	0	2	2	4	2
08:25	2	1	0	1	1	4	3
08:30	2	2	0	1	4	2	2
08:35	3	4	0	1	5	4	4
08:40	1	2	1	1	3	3	1
08:45	2	1	1	1	1	2	3
08:50	4	1	1	2	4	0	1
08:55	1	1	0	0	2	2	3
09:00	0	2	0	1	1	0	1
Total	**23**	**23**	**4**	**11**	**31**	**29**	**27**
17:05	1	4	0	2	2	1	1
17:10	2	0	0	1	2	2	1
17:15	2	2	0	2	4	3	4
17:20	0	0	0	2	1	1	2
17:25	1	2	0	1	2	2	1
17:30	1	0	0	1	1	2	1
17:35	0	3	0	1	2	3	1
17:40	0	0	0	0	1	2	1
17:45	0	2	0	1	2	2	5
17:50	0	0	1	0	2	2	1
17:55	1	1	0	1	2	1	1
18:00	1	2	0	1	3	2	1
Total	**9**	**16**	**1**	**13**	**24**	**23**	**20**

Table 8: Weekday AM & PM Peak Period Queue Lengths (Veh)

Current Junction Operation Rating

2.1.32 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.1.33 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 1871 vehicles per hour	**G**	Max queue = 5 vehicles	**G**

2.2 Eureka Site

2.2.1 The potential Local Plan allocation site of Eureka is located to the north of Ashford town centre and J9 of the M20 Motorway. The site is adjacent to the A251 Trinity Rd and it is anticipated that the site would be accessed via Nicholas Rd.

2.2.2 The current traffic conditions at key junctions on the highway network surrounding the potential Eureka allocation site have been captured through the collection of junction turning count and queue length surveys. In addition an automatic traffic count (ATC) surveys was undertaken on the A251 link. The junctions were identified during a site drive-through undertaken on Friday 29/05/15 with KCC and ABC officers.

The surveyed junctions are:

Junction 5 – A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road;

Junction 9 – A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road; and

ATC – A251 Trinity Road, between Upper Pemberton and Hurst Road roundabouts.

Junction 5 – A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road

2.2.3 The A251 Trinity Road/ Rutherford Road junction is located approximately 200 metres north of M20 junction 9. It provides access to Eureka Leisure Park, Eurogate Business Park and COTY offices. It is north of Ashford town centre. The junction is a 5 arm priority roundabout with informal pedestrian crossing facilities across all arms.

Junction Turning Counts

AM Peak						
Junction Arm	**A251 Trinity Road (N)**	**Bradfield Road**	**Rutherford Road**	**A251 Trinity Road (S)**	**Thomson Road**	**Total**
A251 Trinity Road (N)	2	6	47	670	45	**770**
Bradfield Road	1	0	2	11	0	**14**
Rutherford Road	47	2	0	118	5	**172**
A251 Trinity Road (S)	957	43	187	6	170	**1363**
Thomson Road	7	0	2	20	0	**29**
Total	**1014**	**51**	**238**	**825**	**220**	**2348**
PM Peak						
Junction Arm	**A251 Trinity Road (N)**	**Bradfield Road**	**Rutherford Road**	**A251 Trinity Road (S)**	**Thomson Road**	**Total**
A251 Trinity Road (N)	0	4	112	865	2	**983**
Bradfield Road	13	0	2	69	0	**84**
Rutherford Road	70	0	0	241	0	**311**
A251 Trinity Road (S)	694	4	337	1	9	**1045**
Thomson Road	42	0	6	146	0	**194**
Total	**819**	**8**	**457**	**1322**	**11**	**2617**

Table 9: Origin – Destination Traffic Flows

2.2.4 Table 9 shows that the PM peak is the busiest at this junction. In both peak periods there is a dominant flow on the A251 Trinity Road in both directions compared to the small roads entering this roundabout. During the PM peak, the flows on these smaller roads does increase significantly compared to the AM peak.

Observed Queue Lengths

Time	A251 Trinity Road (N)			Bradfield Road	Rutherford Road		A251 Trinity Road (S)			Thomson Road
	Lane 1	Lane 2	Lane 3		Lane 1	Lane 2	Lane 1	Lane 2	Lane 3	
08:05	0	3	1	0	0	0	0	4	3	1
08:10	0	0	0	0	2	1	0	3	2	1
08:15	0	0	0	0	1	1	0	5	1	0
08:20	0	2	2	0	2	0	0	3	1	2
08:25	0	0	2	0	0	0	0	2	2	1
08:30	1	0	0	0	2	1	0	1	2	2
08:35	1	0	1	0	0	1	0	3	1	0
08:40	0	1	0	0	0	1	0	3	1	2
08:45	0	0	0	0	1	2	0	4	1	1
08:50	0	2	4	0	2	0	0	3	1	1
08:55	0	0	0	0	0	0	0	3	3	1
09:00	0	1	2	0	2	2	0	1	1	1
Total	**2**	**9**	**12**	**0**	**12**	**9**	**0**	**35**	**19**	**13**
17:05	0	3	4	0	0	1	0	4	3	4
17:10	0	2	4	0	0	1	0	2	1	8
17:15	0	4	5	0	1	1	0	3	2	2
17:20	0	1	4	0	2	2	0	1	2	1
17:25	0	2	5	0	0	1	0	2	1	4
17:30	0	2	0	0	2	2	0	2	1	2
17:35	0	2	3	0	1	1	0	0	1	2
17:40	0	2	1	0	0	1	0	2	2	3
17:45	1	1	3	0	0	1	0	2	2	1
17:50	1	1	0	0	2	2	0	1	2	2
17:55	0	1	3	0	0	1	0	2	3	1
18:00	0	2	4	0	0	1	0	3	2	2
Total	**2**	**23**	**36**	**0**	**8**	**15**	**0**	**24**	**22**	**32**

Table 10: Weekday AM & PM Peak Period Queue Lengths (Veh)

2.2.5 Table 10 demonstrates that there is very little queueing on any arm at this junction. The largest queues are found on A251 Trinity Road (S) in the AM peak and A251 Trinity Road (N) in PM peak. The queues observed on Thomson Road in the PM peak may be explained by the significantly larger flow on A251 Trinity Road (S) which has priority over those trying to exit Thomson Road.

Current Junction Operation Rating

2.2.6 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.2.7 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 2617 vehicles per hour	**A**	Max queue = 5 vehicles	**G**

Junction 9 – A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road

2.2.8 The A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road junction is located 1.8 kilometres further north east of the A251 Trinity Road/ Rutherford Road junction, away from Ashford town centre. The junction is a 3 arm signalised junction with formal pedestrian crossing points across all arms.

2.2.9 Table 11 shows that the AM peak is slightly busier than the PM peak however they are very similar. In the AM the largest flow comes from the A251 Faversham Road with nearly 60% of the flow going to Trinity Road. From the A2042 Faversham Road just over half of the flow heads to Trinity Road and from Trinity Road just over half heads north on Faversham Road.

2.2.10 In the PM peak the largest flow heads from Trinity Road and 63% go north on A251 Faversham Road. From A252 Faversham Road just over half head towards Trinity Road and from the A2042 Faversham Road just over half continues north.

Junction Turning Counts

AM Peak				
Junction Arm	**A251 Faversham Road**	**A2042 Faversham Road**	**A251 Trinity Road**	**Total**
A251 Faversham Road	0	283	406	**689**
A2042 Faversham Road	206	0	248	**454**
A251 Trinity Road	231	188	0	**419**
Total	**437**	**471**	**654**	**1562**
PM Peak				
Junction Arm	**A251 Faversham Road**	**A2042 Faversham Road**	**A251 Trinity Road**	**Total**
A251 Faversham Road	0	223	250	**473**
A2042 Faversham Road	214	0	180	**394**
A251 Trinity Road	400	233	0	**633**
Total	**614**	**456**	**430**	**1500**

Table 11: Origin – Destination Traffic Flows

Observed Queue Lengths

2.2.11 Table 12 indicates that the level of queueing in a single lane in both the AM and PM peaks is greater on A2042 Faversham Road. A251 Trinity Road has fairly similar queues in both lanes. There is generally queueing on all arms across the whole surveyed period.

Time	A251 Faversham Road		A2042 Faversham Road	A251 Trinity Road	
	Lane 1	Lane 2		Lane 1	Lane 2
08:05	3	10	13	6	4
08:10	3	8	8	4	2
08:15	3	10	12	7	3
08:20	4	13	15	4	7
08:25	6	7	18	8	9
08:30	8	10	12	4	8
08:35	3	9	7	5	8
08:40	10	14	16	6	6
08:45	7	14	16	1	9
08:50	7	14	14	1	5
08:55	4	11	19	1	4
09:00	3	11	11	5	7
Total	**61**	**131**	**161**	**52**	**72**
17:05	5	3	8	5	4
17:10	2	8	13	5	5
17:15	2	4	16	7	8
17:20	2	11	11	8	4
17:25	3	4	7	7	5
17:30	3	8	7	9	4
17:35	5	7	6	3	5
17:40	0	7	8	5	8
17:45	4	11	10	6	4
17:50	3	11	9	5	8
17:55	4	12	10	2	7
18:00	2	4	6	3	11
Total	**35**	**90**	**111**	**65**	**73**

Table 12: Weekday AM & PM Peak Period Queue Lengths (Veh)

Current Junction Operation Rating

2.2.12 The current operation of the junction has been allocated a Red/Amber/Green (RAG) rating based upon the level of traffic flow and queueing observed at the junction. The rating has been derived using a standard set of criteria as set out below:

Traffic Flow		Queue Length	
Max >3000 vehicles per hour	**R**	Max queue >30 vehicles	**R**
Max 2000-3000 vehicles per hour	**A**	Max queue 10-30 vehicles	**A**
Max <2000 vehicles per hour	**G**	Max queue <10 vehicles	**G**

2.2.13 The A2042 Canterbury Road/ A28 Simone Weil Avenue junction has been rated as follows:

Traffic Flow		Queue Length	
Max = 1562 vehicles per hour	G	Max queue = 18 vehicles	A

Automatic Traffic Count Survey

2.2.14 The ATC survey was carried out between Upper Pemberton and Hurst Road roundabout on A251 Trinity Road. Trinity Road connects M20 Junction 9 in the south to A251 Faversham Road at its northern extent. There are various business parks and office buildings that can be accessed from this road at its southern end and a residential area to the north. The speed limit in this location changes from 40 mph to the south to 30 mph to the north. The location of the survey is shown in Figure 1.

2.2.15 The survey was carried out between Tuesday 22nd September and Monday 28th September 2015.

Direction	AM	PM
Northbound	430	794
Southbound	873	440

Table 13: ATC Traffic Flows on A251 Trinity Road

2.2.16 Table 13 demonstrates that there is a greater flow southbound towards the M20 motorway and Ashford town centre in the AM peak hour and approximately half of this flow travelling northwards. This pattern is reversed in the PM peak hour, when there is a larger flow northbound away from the M20 motorway and Ashford town centre which indicates a clear tidality in traffic flows between the peak periods.

3 Development Sites

3.1 Local Plan Allocation Sites

3.1.1 The two major allocation sites are located to the north of Ashford town centre. They are Kennington East and Eureka. Current details of each site are outlined below.

Kennington East

3.1.2 The potential Local Plan allocation site of Kennington East is located on the north eastern edge of Ashford town in the residential area of Kennington. It is anticipated that the principal access to this site would be onto the A2070 Willesborough Road.

- 700 residential units
- 2 form entry (FE) primary school

Eureka

3.1.3 The potential Local Plan allocation site of Eureka is located to the north of Ashford town centre and J9 of the M20 Motorway. The site is adjacent to the A251 Trinity Rd and it is anticipated that the site would be accessed via Nicholas Rd.

- 400 residential dwellings
- 100,000 square metres employment land uses

3.2 Highway Improvement Assumptions

3.2.1 Assumed or required highway improvements which would have an impact on the assignment of trips in this study have been included. The most significant in the Ashford area is Highways England improvements at M20 Junction 10. The plans include a new junction to the south of the existing M20 Junction 10 and a link road to the A2070 on the south of the M20. It has therefore been taken into consideration that residents of Kennington East would be more attracted to use a route incorporating this junction than they would in the existing situation.

4 Traffic Analysis

4.1 Development Scenarios

4.1.1 Due to the exact quantum and mix of proposed development being uncertain at this stage, two scenarios have been developed for this study in order to provide an indication of the operational capacity of the key junctions at the end of the Local Plan period:

1. High Growth scenario – assuming the absolute maximum of development, this scenario has used robust trip rates, distribution and assignment methodologies in order to provide a 'worst case scenario' under which to test the existing junctions within the vicinity of the developments.
2. Core Scenario – assumes reduced levels of trip generation associated with the proposed development and has also taken into account the likely impact of Travel Plan measures, alternative route choice and reduced background traffic growth in the vicinity of the developments to represent a more realistic forecast of traffic impact on the network.

4.1.2 The following sections provide commentary on the assumptions used when developing the two above scenarios.

4.2 High Growth Scenario

Residential Trips

4.2.2 Trip rates for residential land uses were obtained from the Waterbrook Park, Ashford 2012 Phase 1 Transport Assessment (TA). These are approved trip rates from recent site applications and are higher than the trip rates calculated from TRICS. The residential trip rates are shown in Table 14.

Land Use	Unit	Residential Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Residential	Dwellings	0.21	0.42	0.63	0.42	0.21	0.63

Table 14: Residential Trip Rates (High Growth) 2

4.2.3 Using the above trip rates, Table 15 displays the resultant numbers of trips for both the Kennington East and Eureka development sites.

Site	Size	Residential Trip Generation					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Kennington East	700 units	147	294	441	294	147	441
Eureka	400 units	84	168	252	168	84	252

Table 15: Residential Trip Generation by Site (High Growth)

Employment Trips

4.2.4 The exact employment land use details at the proposed Eureka development site are unknown at this stage; therefore, to provide a robust assessment, an estimate of 100,000sqm of employment land use has been used. The type of employment proposed for the site is also unknown; therefore, B1 Office Land Use from TRICS has been used as this produces the most trips per square metre. This assumption will therefore provide a likely overestimation of the amount of trips that are actually likely to be produced by the employment land use at the Eureka development site.

4.2.5 Similar sites have been chosen from TRICS based on location and nearby public transport availability and the resultant trip rates are displayed in Table 16.

Land Use	Unit	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Office B1a	100sqm	2.10	0.17	2.27	0.06	1.78	1.84

Table 16: Employment Trip Rates (High Growth)

4.2.6 The estimated trip generation from the employment land use at the Eureka site for the high growth scenario are shown in Table 17 below.

Land Use	Size	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Office B1a	100,000sqm	2099	170	2269	60	1780	1840

Table 17: Employment Trip Generation (High Growth)

Primary School Trips

4.2.7 Within the high growth scenario a robust assumption that each pupil will be making an individual vehicular trip with no modal split reductions applied. Therefore, 420 trips would travel to the site in the AM peak and 420 would travel away from the site in the PM peak as a starting point before adjustments are made to account for the school PM peak being outside of the highway PM peak and internalisation of trips within the

Kennington site. It has also been assumed that, as the above is a likely overestimation of pupil trips, staff trips are also included in this figure.

4.2.8 Appropriate trip rates from the TRICS database have been used to derive a factor to adjust the primary school PM peak of 15:00 to 16:00, to the wider highway PM peak used for this study of 17:00 to 18:00. It is assumed that the AM peak will remain the same with the majority of pupils arriving between 08:00 and 09:00. This factor has been applied to the 420 pupils leaving the school site in order to adjust the assumption to the highway PM peak hour used in this study.

4.2.9 Typically, 1,200 residential dwellings create demand for a 2 Form Entry (FE) primary school. It has been agreed with KCC officers that an appropriate internalisation (i.e. trips originating from within the development itself) factor for a primary school in this location would be approximately 65% of trips in the AM peak. As the development is proposing 700 residential dwellings the school will, therefore, cater for more than just on-site school place demand, so the internalisation factor has been lessened proportionately as follows:

- 700/1200 = 58.3%
- 58.3% of 65% = 38%
- Internalisation factor of 38% of education trips, with 62% of traffic generation from off-site locations.

4.2.10 Of the external trips, it has been assumed that the majority of primary school trips are local trips, assignment assumptions have been made based on the approximate size of the residential areas near to the Kennington site.

4.2.11 Table 18 shows step by step results of the above assumptions. The Primary School is therefore proposed to generate 260 vehicles trips in the AM peak and 22 vehicles trips in the PM peak.

Assumptions	Resultant Trips	
	AM Peak	PM Peak
Number of Pupil trips	420	420
Adjusted PM trips using TRICS trip rates	420	35
Application of internalisation factor	**260**	**22**

Table 18: Primary School Trip Generation Assumptions (High Growth)

4.2.12 Benchmarking trip rates from the TRICS database have been identified in order to provide a sense-check of the assumptions applied and the resultant trip generation predicted for the primary school land use within the high growth scenario.

4.2.13 Survey sites selected within TRICS were in a similar location to Kennington East (Edge of Town, Suburban Area) and have approximately the same number of pupils as that proposed at Kennington East. The following trip rates in **Error! Reference source not found.** have been used.

Land Use	Unit	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		In	Out	Total	In	Out	Total
Primary School	Per pupil	0.32	0.23	0.55	0.01	0.03	0.04

Table 19: Primary School - Comparison Trip Rate

4.2.14 Using the TRICS trip rates, **Error! Reference source not found.** displays the resultant number of trips for the Primary School land use.

Land Use	Unit	AM Peak (08:00-09:00)			PM Peak (17:00-18:00)		
		In	Out	Total	In	Out	Total
Primary School	Per pupil	134	98	232	5	13	18

Table 20: Primary School – Comparison Trip Generation

4.2.15 When comparing the High Growth scenario Primary School vehicle trips with the TRICS trip rates, the High Growth trips are slightly higher than the TRICS trip rates. This provides a robust assessment for the Primary School trips in the High Growth scenario.

Distribution

4.2.16 In order to determine where the development site trips would be travelling to/from, journey to work data from the 2011 Census was interrogated. The middle super output area in which each site is located has been used as the sites origin location on which the data was interrogated. Journey to work data was collected from these output areas to and from all the other Ashford middle super output areas, all districts of Kent, South East of England and the Rest of the UK.

4.2.17 The journey to work data was then inverted to provide a PM peak scenario.

Assignment

4.2.18 Once the distribution data was collated, the most likely routes to/from the site were identified using an online mapping tool to determine the assignment of trips on the local highway network. Trips were assigned to the local highway network based on most likely route of travel to/ from the development site (factors such as ease of route

and journey time were taken into consideration in addition to the highway improvement assumptions.

4.2.19 For each development, the bullet points below outline the assumptions made when assigning trips.

Kennington East

- Routes to Dover and Shepway are expected to use the M20 Junction 10;
- Trips to Canterbury, Swale and Thanet would travel north from the site;
- All trips to Eastbourne, Hastings and Rother assumed to travel south from the site (i.e. not via the M20);
- The remaining districts in Kent, the South East of England and the Rest of the UK areas would require access to the M20:- 65% by Junction 9 and 35% by Junction 10; and
- Trips across and around Ashford were assigned to the shortest and most likely routes.

4.2.20 Consideration has been given to the distribution of traffic from the development and use of the proposed M20 junction 10a. The new junction proposes to reduce congestion, improve journey time reliability and safety, and help separate long distance traffic from local traffic. This route may be the preferred route from the development to access the M20 in both directions.

4.2.21 The resulting assignment is shown in Table 21. It shows that in the AM peak 30% of the development traffic turns left towards the M20 Junction 10a and in the PM peak 38% of the traffic travels this way.

All Trips	Assignment			
	AM Peak		PM Peak	
	In	Out	In	Out
South via A2042 Canterbury Road	46%	48%	48%	46%
South via M20 J10	30%	38%	38%	30%
North via A28 Canterbury Road	20%	12%	12%	20%
Local Trips	5%	2%	2%	5%
Total	**100%**	**100%**	**100%**	**100%**
Of those using A2042 Canterbury Road:	**In**	**Out**	**In**	**Out**
Via Bybrook Road	2%	1%	1%	2%
Via A2042 Faversham Road	9%	4%	4%	9%

All Trips	Assignment			
Via Simone Weil Avenue (& M20 J9)	6%	16%	16%	6%
Via town centre	30%	28%	28%	30%
Total	**46%**	**48%**	**48%**	**46%**

Table 21: Assignment of Residential and Employment Trips - Kennington East (High Growth)

Primary School Distribution & Assignment

4.2.22 The distribution and assignment of the Primary School trips has been dealt with separately to that of residential and employment trips.

4.2.23 Table 22 displays the assignment of the Primary School trips. The local trips account for the internal site trips as detailed above with the remaining 62% of trips coming from the nearby surrounding area.

All Trips	Assignment			
	AM Peak		PM Peak	
	In	Out	In	Out
North via A28 Canterbury Road	25%	25%	25%	25%
South via A2042 Canterbury Road	25%	25%	25%	25%
South via M20 J10	12%	12%	12%	12%
Local Trips	38%	38%	38%	38%
Total	**100%**	**100%**	**100%**	**100%**
Of those using A2042 Canterbury Road:	**In**	**Out**	**In**	**Out**
Via Bybrook Road	5%	5%	5%	5%
Via A2042 Faversham Road	15%	15%	15%	15%
Via Simone Weil Avenue (& M20 J9)	3%	3%	3%	3%
Via town centre	3%	3%	3%	3%
Total	**25%**	**25%**	**25%**	**25%**

Table 22: Assignment of External Primary School Trips - Kennington East (High Growth)

Eureka

- Routes to Dover and Shepway are expected to use the M20 Junction 9;
- Trips to Canterbury, Swale and Thanet would travel north from the site;
- All trips to Eastbourne, Hastings and Rother to travel south from the site;

- The remaining districts in Kent and the rest of the UK would require access to M20 Junction 9; and
- Trips across and around Ashford were assigned the shortest and most likely routes.

4.2.24 The resulting distribution is shown in Table 23.

All Trips	Assignment			
	AM Peak		PM Peak	
	In	Out	In	Out
South via M20 J9	69%	73%	73%	69%
North via A251 Trinity Road	18%	13%	13%	18%
Local Trips	13%	14%	14%	13%
Total	**100%**	**100%**	**100%**	**100%**
Local Trips	**In**	**Out**	**In**	**Out**
To Local Residential Area and Shops	7%	7%	7%	7%
Bradfield Road	1%	1%	1%	1%
Rutherford Road	2%	2%	2%	2%
Thomson Road	1%	1%	1%	1%
South to town centre	3%	3%	3%	3%
Total	**13%**	**14%**	**14%**	**13%**
North trips	**In**	**Out**	**In**	**Out**
Towards Ashford	5%	5%	5%	5%
Towards Faversham	13%	9%	9%	13%
Total	**18%**	**13%**	**13%**	**18%**

Table 23: Assignment of Residential and Employment Trips – Eureka (High Growth)

Background Traffic Growth

4.2.25 In order to provide an indication of the operational capacity of the key junctions at the end of the Local Plan period, the number of trips calculated above has been added to the 2015 observed traffic flows and some assumptions have been made regarding background traffic growth. Background traffic growth in this context relates to traffic generated by other development in and around Ashford outside of those considered directly in this study; and socio-economic factors (i.e. general population growth, car ownership levels). The following paragraphs outline the methodology used to determine a growth factor to the end of the Local Plan period, 2031.

4.2.26 The total number of dwellings predicted in TEMPRO for the Ashford Urban Area between 2015 and 2031 is 10,848. As a proportion of this has been taken account at the Kennington East and Eureka development sites (circa 1100 dwellings) in this study,

the relative proportion has been removed from the calculated growth factors (i.e. 6% for the 700 houses at Kennington East and 4% for the 400 houses at Eureka, giving a total reduction of 10%). The result of the reduction is shown in Table 24.

4.2.27 The DfT's Road Traffic Forecasts 2015 recognises that recent data has shown 'a largely flat trend over the last decade' in traffic growth and it is widely recognised that the NTM adjusted TEMPRO growth factors may be giving an over estimation of the actual growth in vehicular traffic in future years. The NTM does not take account of likely changes in travel behaviour as the network becomes more congested (i.e. peak spreading, changes in travel mode and route). Congestion and increased journey times increases the relative cost of travelling by car and makes other modes more attractive.

4.2.28 In agreement with KCC, this study has used trip rates from the Waterbrook Park, 2012 TA which are based on the South Ashford Transport Study (SATS). Key objectives from the study were to develop a sustainable and integrated transport strategy that would minimise the amount of car trips that would be generated. The trip rates were reduced for major sites as a package of transport measures encouraging other modes of travel would be implemented at those sites. The trip rates used in the SATS study were reduced by 16% for residential land uses and 29% for employment land uses.

4.2.29 In the absence of any recognised methodology, the average of the SATS trip rate reduction for the residential and employment land uses (22.5%) has been applied to the background growth factors as these assumptions are based on reducing the reliance on the private car. These reductions are considered a reasonable assumption based on declining car use but still accommodating background growth. Table 24 shows the resulting growth factors to be used.

2015-2031 Growth Factors	**Kennington East**		**Eureka**	
	AM	**PM**	**AM**	**PM**
2015-2031 NTM TEMPRO Growth Factors	1.35	1.37	1.35	1.37
Adjusted for proportion of dwellings	1.33	1.35	1.34	1.35
Adjusted for likely changing travel behaviours	**1.26**	**1.27**	**1.26**	**1.27**

Table 24: 2015 - 2031 Growth Factor Adjustments (High Growth)

4.3 Core Scenario

Residential Trips

4.3.2 Residential trip rates for both Kennington East and Eureka development sites have been derived using the TRICS database for the Core scenario. Similar sites have been chosen using the Houses Privately Owned land use category. There were no large sites like the development sites in this study in TRICS and so smaller sites with similar attributes were used. Sites were chosen that were in a similar location and had a similar level of accessibility. Very small developments were not included. Table 25 displays the TRICS trip rates.

Land Use	Unit	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Residential	Dwellings	0.16	0.42	0.57	0.38	0.22	0.60

Table 25: Residential Trip Rates (Core Scenario)

4.3.3 Conningbrook Lakes is a similar development site proposed in Ashford and their Travel Plan (2012) has been used to understand their future mode share targets. They have a target to reduce single occupancy car use by 10%. This assumption has therefore been applied to the trip rates for both Kennington East and Eureka as both developments will seek to reduce car use through Travel Plan measures.

4.3.4 The proposed total trips are shown in Table 26.

Site	Size	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Kennington East	700 units	98	262	360	238	138	376
Eureka	400 units	56	150	206	136	79	215

Table 26: Residential Trip Generation (Core Scenario)

Employment Trips

4.3.5 The employment land use development at the Eureka site is unknown and for the purposes of the Core Scenario a 'most likely' figure of 50,000sqm has been used.

4.3.6 Trip rates from the SATS were used in the Waterbrook Park, Ashford 2012 Phase 1 Transport Assessment (TA) for the B1a Office Land Use and have been used for the Core scenario. These trip rates are significantly lower than those interrogated from TRICS but they have been approved for use by KCC and used in a number of Transport

Assessments for sites around Ashford. The SATS trip rates were developed based on the assumption that a package of transport measures would be provided as part of the developments coming forward across Ashford. For the purposes of the Core Scenario, it is assumed that sustainable transport measures will be implemented at the two development sites.

4.3.7 Whilst the quantum of development assumed for this Core Scenario is 'most likely', this scenario may still be providing an over estimation of the number of trips as in the absence of knowing the mix of development as this site, trip rates for B1a Office Land Use have been used which gives the highest number of trips per sqm for employment land uses.

4.3.8 The trip rates are displayed in Table 27 and the resulting trips are shown in Table 28.

Land Use	Unit	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Office B1a	50,000sqm	1.07	0.14	1.21	0.14	0.78	0.92

Table 27: Employment Trip Rates (Core Scenario) – Eureka

Land Use	Size	Reduced Trip Rates					
		AM Peak			PM Peak		
		In	Out	Total	In	Out	Total
Office B1a	50,000sqm	535	70	605	70	390	460

Table 28: Employment Trip Generation (Core Scenario) - Eureka

Primary School Trips

4.3.9 The proposed Kennington Primary School is known to be a 2FE school; therefore, 420 pupils will attend the school when it is at full capacity.

4.3.10 The proposed mode share for this land use has been taken from the Transport Statement (April, 2015) for a similar development site in Ashford. Finberry Primary School has been built as part of the Cheesemans Green development. Mode share data was sourced from the School Travel Plans at East Stour Primary School, St Simon Primary School, John Wesley Primary School, Kingsnorth Primary School, Beaver Green Primary School and Willesborough Junior School.

4.3.11 It is often found that children of primary school age will consider lift sharing with friends only therefore the surveys fail to account for the number of siblings at the same school who would travel together. The Transport Statement suggests it is reasonable that around 60% of those pupils travelling by car would travel with a

sibling. This figure is based on an average of data from three existing primary schools – Slade Primary, Iwade Primary and White Cliffs. Based on an average of two pupils per car, a sibling reduction factor of 0.70 (1-(0.6/2)) has been applied to the number of pupils travelling by car, resulting in the mode shares shown in Table 29 below.

Mode				
	Pupils		Staff	
	%	No.	%	No.
Walk	227	54%	7	13%
Cycle	8	2%	1	1%
Bus	0	0%	2	4%
Car/Van	122	29%	41	81%
Liftshare	63	15%	0	0%
Rail	0	0%	0	0%
Other	0	0%	0	0%
Total	420	100%	50	100%

Table 29: Proposed Modal Split for Primary School - Kennington (Core Scenario)

4.3.12 Table 30 shows the peak hour pupil and staff vehicle trip attraction associated with the Primary School would be 163. The pupil arrival trips are also counted as departures to account for the fact that parents would drive to and from the school (and the same in the PM peak). Staff trips are counted as arrivals in the AM peak and departures in the PM peak.

4.3.13 A Travel Plan will be prepared as part of the planning application, which, upon adoption will aim to increase the number of staff and pupils using sustainable modes. Assuming a 10% reduction in car travel, the proposed AM peak trip attraction would be 146.

4.3.14 Typically primary schools now offer Breakfast Clubs on every weekday so that parents can drop pupils earlier. Also, some teachers would arrive earlier that 08:00. A reduction of 30% of the total vehicular trips has been assumed to take into account these trips.

4.3.15 Table 30 shows each stage of the reductions discussed earlier.

Assumptions	Primary School Trips					
	AM Peak			PM Peak (1500-1600)		
	In	Out	Total	In	Out	Total
Mode Split	163	122	284	122	163	284
Travel Plan Reduction	146	110	256	110	146	256
Arrival outside peak hours	102	77	179	77	102	179

Table 30: Primary School Trip Generation Assumptions (Core Scenario)

4.3.16 As discussed in the High Growth Scenario, the PM peak for Primary Schools is earlier than the PM peak for this study. The same reduction factor has been applied to the PM peak trips in this scenario. The results are shown in Table 31 below. When comparing these trip generations to those derived from TRICS they are slightly lower but it is expected that the proposed site will implement a Travel Plan; which, most sites in TRICS did not have.

Land Use	Primary School Trips					
	AM Peak			PM Peak (1700-1800)		
	In	Out	Total	In	Out	Total
Primary School	102	77	179	6	8	14

Table 31: Primary School Highway PM Peak Trip Generation (Core Scenario)

4.3.17 The above assumptions are based on 100% attendance of all staff and pupils. Also, the methodology does not take into account part time staff working at the staff and therefore travelling outside of peak times. It is, therefore, considered that this is a robust assessment of the likely vehicle trips generated by the proposed primary school at the Kennington East site.

Distribution

4.3.18 The distribution methodology remains unchanged from the High Growth detailed previously.

Assignment

4.3.19 Only the assignment for Kennington East under the Core Scenario has altered from the High Growth Scenario based on the changes proposed at M20 Junction 10a. More emphasis has been given to the assignment of routes potentially using the new junction from the Kennington development site (which means there are fewer vehicles using the A28/A2042 Canterbury Road junctions assessed in this study). The alternative route to the M20 is Junction 9 via the A28/A2042 Canterbury Road which

heads towards Ashford town centre and can potentially suffer from delays in peak periods.

In the AM peak this has derived a right/left turning split from the proposed development access junction of 60%/40% (40% of development traffic turning right towards the M20 junction 10a). The route assumptions in the PM peak are calculated in the same way as the AM peak, therefore the resultant split is 46%:54%. This is an increase of 10% in the AM peak and 16% in the PM peak. The Core scenario assignment for Kennington East can be found in Table 32 below.

All Trips	Assignment			
	AM Peak		PM Peak	
	In	Out	In	Out
South via A2042 Canterbury Road	37%	33%	33%	37%
South via M20 J10	40%	54%	54%	40%
North via A28 Canterbury Road	18%	11%	11%	18%
Local Trips	5%	2%	2%	5%
Total	**100%**	**100%**	**100%**	**100%**
Of those using A2042 Canterbury Road:	**In**	**Out**	**In**	**Out**
Via Bybrook Road	2%	1%	1%	2%
Via A2042 Faversham Road	9%	4%	4%	9%
Via Simone Weil Avenue (& M20 J9)	4%	10%	10%	4%
Via town centre	23%	19%	19%	23%
Total	**37%**	**33%**	**33%**	**37%**

Table 32: Assignment of Residential and Employment Trips – Kennington (Core Scenario)

4.3.20 The assignment methodology for Kennington East Primary School and Eureka development site remains unchanged from the High Growth scenario detailed previously.

Background Traffic Growth

4.3.21 Based on current development predictions for Ashford district, the alternative planning assumptions within TEMPRO have been used to adjust the predicted increase in number of households between 2015 and 2031. Also, the developments being assessed in this study (Kennington East and Eureka) have been removed from these totals in order to avoid double counting.

4.3.22 In addition to the above, the same reductions as detailed previously in the High Growth Scenario methodology have been applied to the TEMPRO growth factors, to account for possible over estimation of the actual growth in vehicular traffic based on recent trends.

4.3.23 Table 33 shows the resulting growth factors to be used.

2015-2031 Growth Factors	Kennington East	
	AM	PM
2015-2031 NTM TEMPRO Growth Factors	1.29	1.31
Adjusted for changing travel behaviours	1.21	1.22

Table 33: 2015 - 2031 Growth Factor Adjustments (Core Scenario)

4.4 Traffic Flow Diagrams

4.4.1 Traffic flow diagrams showing the resultant forecast traffic flows on the network surrounding the Eureka and Kennington development sites are contained in Error! Reference source not found. for the following scenarios:

- Kennington East
    - 2015 observed traffic flows,
    - 2031 High Growth scenario, and
    - 2031 Core scenario.
- Eureka
    - 2015 observed traffic flows,
    - 2031 High Growth scenario, and
    - 2031 Core scenario.

5 Forecast Traffic Impacts

5.1 Overview

5.1.1 The junctions along the study corridors have been assessed under the 2031 High Growth scenario and the 2031 Core Scenario to provide an estimate of the junction's future performance without any mitigation. The following chapter outlines the results of these assessments.

5.1.2 Signalised junctions have been modelled using Linsig v3 junction modelling software, produced by the JCT Consultancy. Roundabout assessments have been modelled using the ARCADY software package which now features within Junctions 9.

5.1.3 Traffic signal controller data has been provided by KCC for signalised junctions, from which existing phasing and staging information has been incorporated into the forecast baseline assessments. The signal stage timings have been optimised as it has been assumed that these would be reviewed by KCC before 2031 if no further improvement was to be made to junctions.

5.2 Kennington Site

Junction 1 – A2042 Canterbury Road/ Simone Weil Avenue – Linsig Assessment

5.2.2 The A2042 Canterbury Road/ Simone Weil Avenue junction has been modelled as a signalised 3 arm junction.

5.2.3 A key output of Linsig assessments is the degree of saturation (DoS) which is the measurement of demand that a junction is experiencing when compared to its total capacity and it is expressed as a ratio of demand to capacity on each approach to the junction. A value of 100% means that demand and capacity are equal and no further traffic is able to progress through the junction. Generally, values over 90% are regarded as suffering from capacity issues and vehicle queueing.

5.2.4 The Mean Maximum Queue represents the maximum queue within a cycle averaged over all the cycles within the modelled time period. When a lane is oversaturated the Maximum Queue within each cycle will grow progressively over the modelled time period.

5.2.5 Table 34 and 35 outline the junction assessment results of the 2031 High Growth and Core scenarios on A2042 Canterbury Road/ Simone Weil Avenue junction in the AM and PM peak periods respectively. Under the High Growth scenario, the A2042 Canterbury Road is significantly over capacity in the northeast and southwest directions in both the AM and PM peak periods. In the PM peak, the right turn arm of A28 Simone Weil Avenue also becomes over capacity. The table highlights that in the Core Scenario the same arms of each peak period are over capacity and whilst not as much as in the High Growth scenario, it is still significant.

Approach Arm	2031 High Growth scenario – AM Peak			2031 Core scenario – AM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Canterbury Rd (E)	132.0	498.0	253	123.9	403.0	197
A2042 Canterbury Rd (W)	122.3	393.7	115	113.9	281.3	81
A28 Simone Weil Ave Left	41.9	19.9	6	38.8	19.5	5
A28 Simone Weil Ave Right	75.9	70.8	5	73.1	67.5	5

Table 34: A2042 Canterbury Road/ Simone Weil Avenue Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – PM Peak			2031 Core scenario – PM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Canterbury Rd (E)	138.5	221.7	73	131.1	221.8	68
A2042 Canterbury Rd (W)	145.4	639.2	238	135.8	545.1	193
A28 Simone Weil Ave Left	78.9	35.3	13	72.8	31.9	12
A28 Simone Weil Ave Right	125.2	468.6	38	120.5	412.8	33

Table 35: A2042 Canterbury Road/ Simone Weil Avenue Junction 2031 PM High Growth & Core Scenarios Assessment Results

Junction 2 – A2042 Canterbury Road/ Bybrook Road – Linsig Assessment

5.2.6 The A2042 Canterbury Road/ Bybrook Road junction has been modelled as a signalised 3 arm junction.

5.2.7 Table 36 demonstrates there are capacity issues on the A2042 Canterbury Road (east) and Bybrook Road. As for the previous junction, the Core scenario is not as over capacity as the High Growth scenario but there are still significant issues under this scenario. Table 37 shows in the PM peak, all arms are over capacity.

Approach Arm	2031 High Growth scenario – AM Peak			2031 Core scenario – AM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Canterbury Rd (E)	147.3	652.6	240	137.0	554.4	193
A2042 Canterbury Rd (W)	87.0	24.7	22	80.1	19.4	18
Bybrook Road	143.3	647.8	94	133.2	549.7	75

Table 36: A2042 Canterbury Road/ Bybrook Road Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – PM Peak			2031 Core scenario – PM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Canterbury Rd (E)	96.3	55.2	30	91.1	39.1	23
A2042 Canterbury Rd (W)	121.3	360.5	173	112.2	264.1	114
Bybrook Road	113.4	320	27	109.0	264.1	22

Table 37: A2042 Canterbury Road/ Bybrook Road Junction 2031 PM High Growth & Core Scenarios Assessment Results

Junction 3 – A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way – Linsig Assessment

5.2.8 The A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way junction has been modelled as a signalised crossroads junction.

Approach Arm	2031 High Growth scenario – AM Peak			2031 Core scenario – AM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Faversham Rd	128.9	477.0	100	121.3	375.4	71
A28 Canterbury Rd	141.1	610.6	118	124.8	434.8	80
George Williams Way	135.7	554.3	50	115.8	331.9	29
A2042 Canterbury Road Ahead	118.0	340.3	87	100.1	94.3	28
A2042 Canterbury Road Right	40.5	50.4	1	39.0	49.4	1

Table 38: A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – PM Peak			2031 Core scenario – PM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A2042 Faversham Rd	117.3	330.4	43	113.2	278.9	35
A28 Canterbury Rd	137.1	570.0	120	128.0	471.5	95
George Williams Way	53.9	54.7	3	51.8	54.0	2
A2042 Canterbury Road Ahead	132.9	519.0	155	118.6	345.8	98
A2042 Canterbury Road Right	104.0	225.1	11	99.9	183.0	9

Table 39: A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way Junction 2031 PM High Growth & Core Scenarios Assessment Results

5.2.9 Table 38 demonstrates that in both the High Growth and Core scenarios all but the A2042 Canterbury Road right turn lane are over capacity in the AM peak period. However, as shown in Table 39, this arm does become over capacity in the PM peak periods but George Williams Way falls significantly under capacity. All other arms remain over capacity in the PM peak.

Junction 4 – A28 Canterbury Road/ Willesborough Road – ARCADY Assessment

5.2.10 The roundabout has been modelled as a 4 arm priority junction using existing geometric measurements.

5.2.11 The key output of the assessment of roundabout junctions is ratio of flow to capacity (RFC). A junction is operating at full capacity when the RFC on one or more arms is 1.0 or greater. A RFC value of 0.85 or less is a general preferred level and indicates that the approach in question is operating within theoretical capacity.

5.2.12 Table 40 and Table 41 summarise the junction modelling results and indicate that in the AM peak, under the High Growth scenario, the A28 Canterbury Road (north) only just enters the threshold of suffering capacity issues but the junction is within operating capacity in the PM peak and under the Core scenario.

Approach Arm	2031 High Growth scenario – AM Peak		2031 Core scenario – AM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
A28 Canterbury Rd (N)	0.88	7	0.76	3
Hotel Access	0.05	0	0.03	0
Willesborough Rd	0.68	2	0.64	2
A28 Canterbury Rd (S)	0.72	3	0.60	2

Table 40: A28 Canterbury Road/ Willesborough Road Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – AM Peak		2031 Core scenario – AM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
A28 Canterbury Rd (N)	0.72	3	0.66	2
Hotel Access	0.03	0	0.02	0
Willesborough Rd	0.79	4	0.62	2
A28 Canterbury Rd (S)	0.64	2	0.57	1

Table 41: A28 Canterbury Road/ Willesborough Road Junction 2031 PM High Growth & Core Scenarios Assessment Results

5.3 Eureka Site

Junction 5 – A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road – ARCADY Assessment

5.3.2 The roundabout has been modelled as a five arm priority junction using existing geometric measurements.

5.3.3 Table 42 and Table 43 demonstrate the junction assessment results for the A251 Trinity Road/ Rutherford Road junction and most arms of the junction operate well within capacity. Only A251 Trinity Road (south) in the High Growth scenario AM peak and A251 Trinity Road (north) in the PM under both scenarios are over capacity and queueing would be observed. This reflects the process of inbound employees in the AM peak and outbound in the PM peak.

Approach Arm	2031 High Growth scenario – AM Peak		2031 Core scenario – AM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
A251 Trinity Rd (N)	0.76	3	0.71	2
Bradfield Rd	0.06	0	0.04	0
Rutherford Rd	0.34	1	0.26	0
A251 Trinity Rd (S)	1.63	1176	0.73	3
Thomson Rd	0.32	1	0.09	0

Table 42: A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – PM Peak		2031 Core scenario – PM Peak	
	Max RFC	Max Queue	Max RFC	Max Queue
A251 Trinity Rd (N)	1.92	1279	1.11	92
Bradfield Rd	0.41	1	0.38	1
Rutherford Rd	0.42	1	0.62	2
A251 Trinity Rd (S)	0.73	3	0.69	2
Thomson Rd	0.74	3	0.65	2

Table 43: A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road Junction 2031 PM High Growth & Core Scenarios Assessment Results

Junction 9 – A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road – Linsig Assessment

5.3.4 The A51 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road junction has been modelled as a signalised 3 arm junction.

Approach Arm	2031 High Growth scenario – AM Peak			2031 Core scenario – AM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A251 Faversham Rd	165.9	798.0	269	124.6	414.3	118
A2042 Faversham Road	147.9	675.3	134	121.3	392.2	70
A251 Trinity Road	129.9	487.7	82	121.7	389.0	62

Table 44: A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road Junction 2031 AM High Growth & Core Scenarios Assessment Results

Approach Arm	2031 High Growth scenario – AM Peak			2031 Core scenario – AM Peak		
	DoS %	Delay (sec/PCU)	MMQ (PCU's)	DoS %	Delay (sec/PCU)	MMQ (PCU's)
A251 Faversham Rd	107.1	186.4	36	102.4	126.0	24
A2042 Faversham Road	116.4	331.5	54	107.1	203.9	35
A251 Trinity Road	145.3	648.1	213	110.4	228.9	60

Table 45: A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road Junction 2031 PM High Growth & Core Scenarios Assessment Results

5.3.5 The results of the junction assessments for A251 Faversham Road/ Trinity Road can be found in Table 44 and Table 45. All arms of the junction are expected to operate over capacity in both scenarios for both the AM and PM peak hours. The junction performance is marginally better in the PM peak period, with the Core scenario being just over the 100% level of capacity but the junction is still expected to suffer from significant queueing and delay.

6 Summary

6.1.1 Amey were commissioned by Kent County Council, in partnership with Ashford Borough Council, to assess the impact of two major Local Plan allocation sites to the north of Ashford town centre.

6.1.2 Junction turning count and queue length surveys were carried out at key junctions close to the proposed development sites in order to provide a snapshot of existing traffic conditions.

6.1.3 The potential Local Plan allocation site of Kennington East is located to the north of the town centre, adjacent to the junction of A28 Canterbury Road/ A2070 Willesborough Road. It is anticipated that the site would be accessed off of A2070 Willesborough Road and the most significant traffic impact would be on the A28 corridor towards Ashford.

6.1.4 The key junctions to be assessed were identified as:

Junction 1 – A2042 Canterbury Road/ A28 Simone Weil Avenue;

Junction 2 – A2042 Canterbury Road/ Bybrook Road;

Junction 3 – A28 Canterbury Road/ A2042 Faversham Road/ George Williams Way; and

Junction 4 – A28 Canterbury Road/ Willesborough Road.

6.1.5 Over 2,000 vehicles were observed to travel through the A2042 Canterbury Road/ Simone Weil Avenue junction in both and AM and PM peak hours. At this junction the maximum observed queue length within a 5 minute period was 20 vehicles in the PM peak. There was a decrease in number of vehicles and maximum queue lengths observed at each junction the further each junction is away from Ashford town centre.

6.1.6 The potential Local Plan allocation site of Eureka is located north of Ashford town centre and Junction 9 of the M20 motorway, adjacent to the A251 Trinity Road and it is anticipated that the site would be accessed via Nicholas Road.

6.1.7 The key junctions to be assessed were identified as:

Junction 5 – A251 Trinity Road/ Thomson Road/ Bradfield Road/ Rutherford Road;

Junction 9 – A251 Faversham Road/ A2042 Faversham Road/ A251 Trinity Road; and

ATC – A251 Trinity Road, between Upper Pemberton and Hurst Road roundabouts.

6.1.8 Over 2,300 vehicles were observed to be travelling through the A251 Trinity Road/ Rutherford Road junction in the AM peak hour and over 2,600 in the PM peak hour. The maximum queue at this junction was only 5 vehicles during a 5 minute period in both the AM and PM peak hours. Observed traffic flows at the A251 Faversham Road/ A251 Trinity Road junction were lower with around 1,500 vehicles in both the AM and PM peak hours, however, there was queuing on all arms during each 5 minute interval in the AM and PM peak hours with a maximum of 19 vehicles in one 5 minute interval of the AM peak on A2042 Faversham Road.

6.1.9 In order to assess the impact of the two development sites on nearby junctions, this report has provided two future development growth options:

1. High Growth scenario – assuming the absolute maximum of development, this scenario has used robust trip rates, distribution and assignment methodologies in order to provide a 'worst case scenario' under which to test the existing junctions within the vicinity of the developments.
2. Core Scenario – assumes reduced levels of trip generation associated with the proposed development and has also taken into account the likely impact of Travel Plan measures, alternative route choice and reduced background traffic growth in the vicinity of the developments to represent a more realistic forecast of traffic impact on the network.

6.1.10 The results of the junction assessments undertaken under these two growth scenarios show that all of the junctions experience capacity problems (the A28 Canterbury Road/ Willesborough Road roundabout junction which experiences only slight capacity problems in the High Growth scenario) in both the High Growth and Core scenarios, and AM and PM peak periods. The two roundabout junctions do experience capacity issues but not as significantly as the signal controlled junctions.

6.1.11 As highlighted previously in the Traffic Growth section, changes in travel behaviours are likely to occur if the junctions remain in their current format. It is likely that drivers would try to find ways to avoid increased congestion, which would therefore provide

less of an impact on the junctions in the study. The following bullet points list some of the changes in travel that may occur:

- Drivers may choose to avoid congested periods at certain junctions by making their journey earlier or later (known as peak spreading);
- Different route choices may be chosen in order to avoid congested junctions, such as using the new M20 junction 10a to access the Kennington East development;
- Home working may continue to increase in urban areas;
- Alternative modes of transport may also become an attractive option rather than continue to pay the increasing costs of the private motor vehicle; and
- The proposed developments are likely to investigate sustainable transport measures (i.e. better/increased bus services or cycle provision) during the planning process and these may also encourage users outside of the development areas to consider alternatives modes of travel.

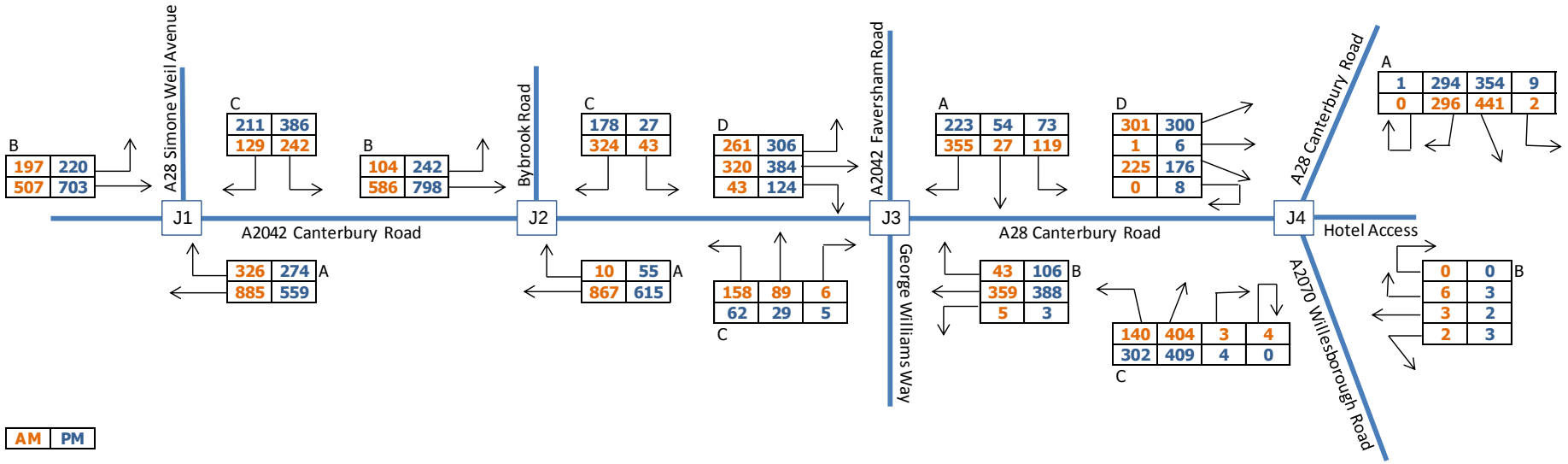
6.1.12 In order to provide for the proposed future development, alternative junction configurations should be investigated. Whilst all of the junctions experience some capacity problems, the observed data suggests the A251 Faversham Road/ A251 Trinity Road junction suffers from notable queueing on all arms and so may be an important junction to investigate mitigation measures.

6.1.13 The signal controlled junctions on the A28/ A2042 Canterbury Road corridor may benefit from being assessed under MOVA, or similar, which would be able to detect when congestion occurs and the system switches to maximise capacity. Linsig3 software used as part of this study is limited and can only assess each junction in isolation.

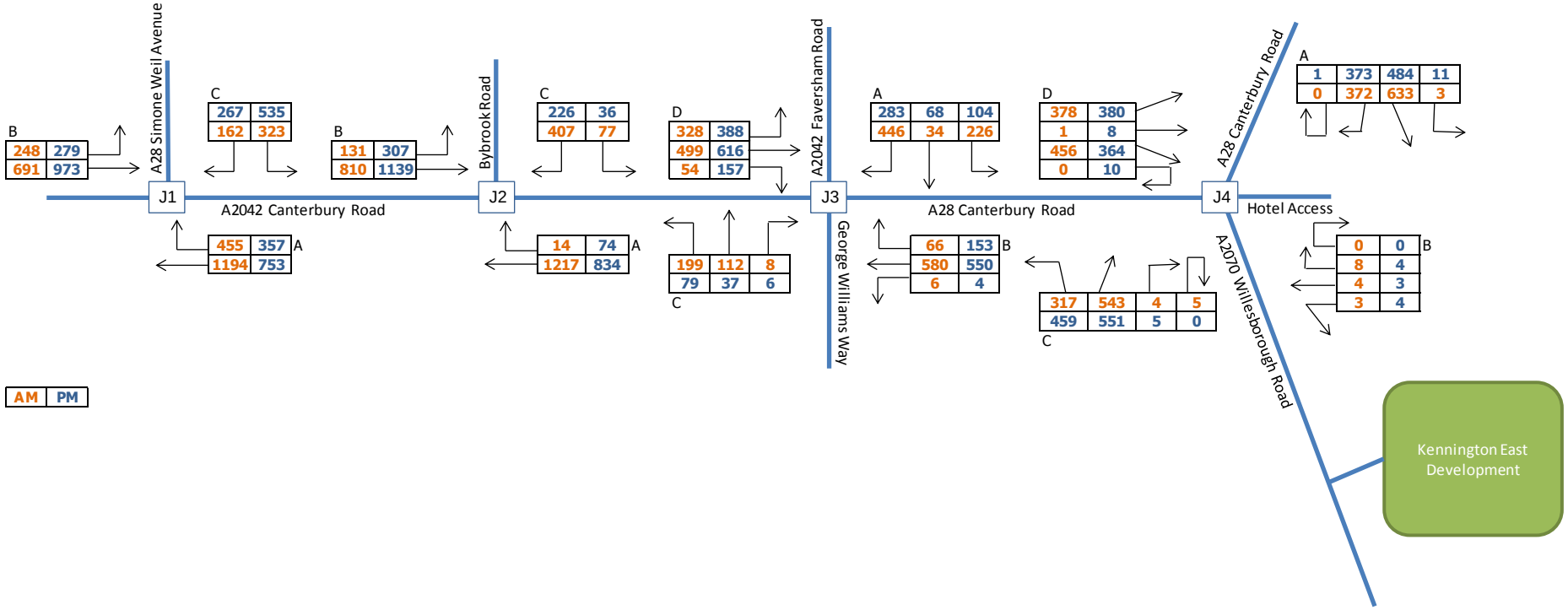
Appendix A Traffic Flow Diagrams

Kennnington Junctions

2015 Observed Traffic Flows

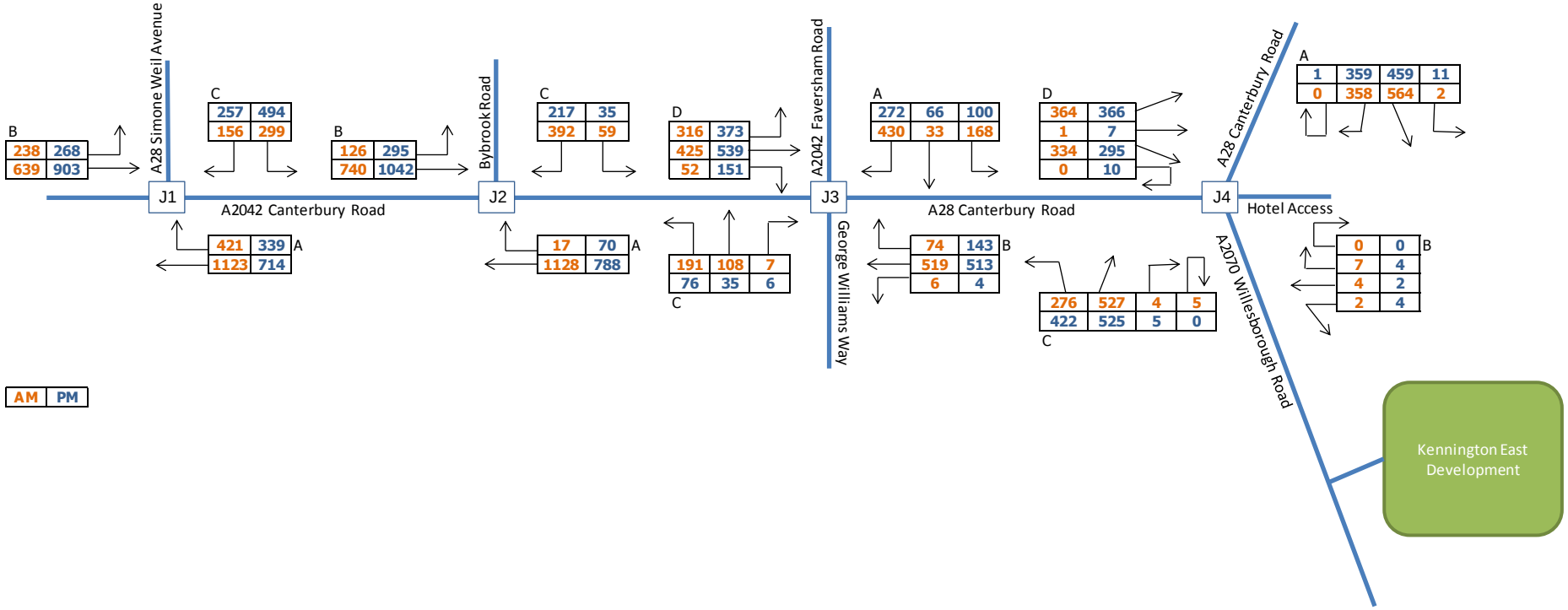


Kennnington Junctions
2031 'High Growth' Flows



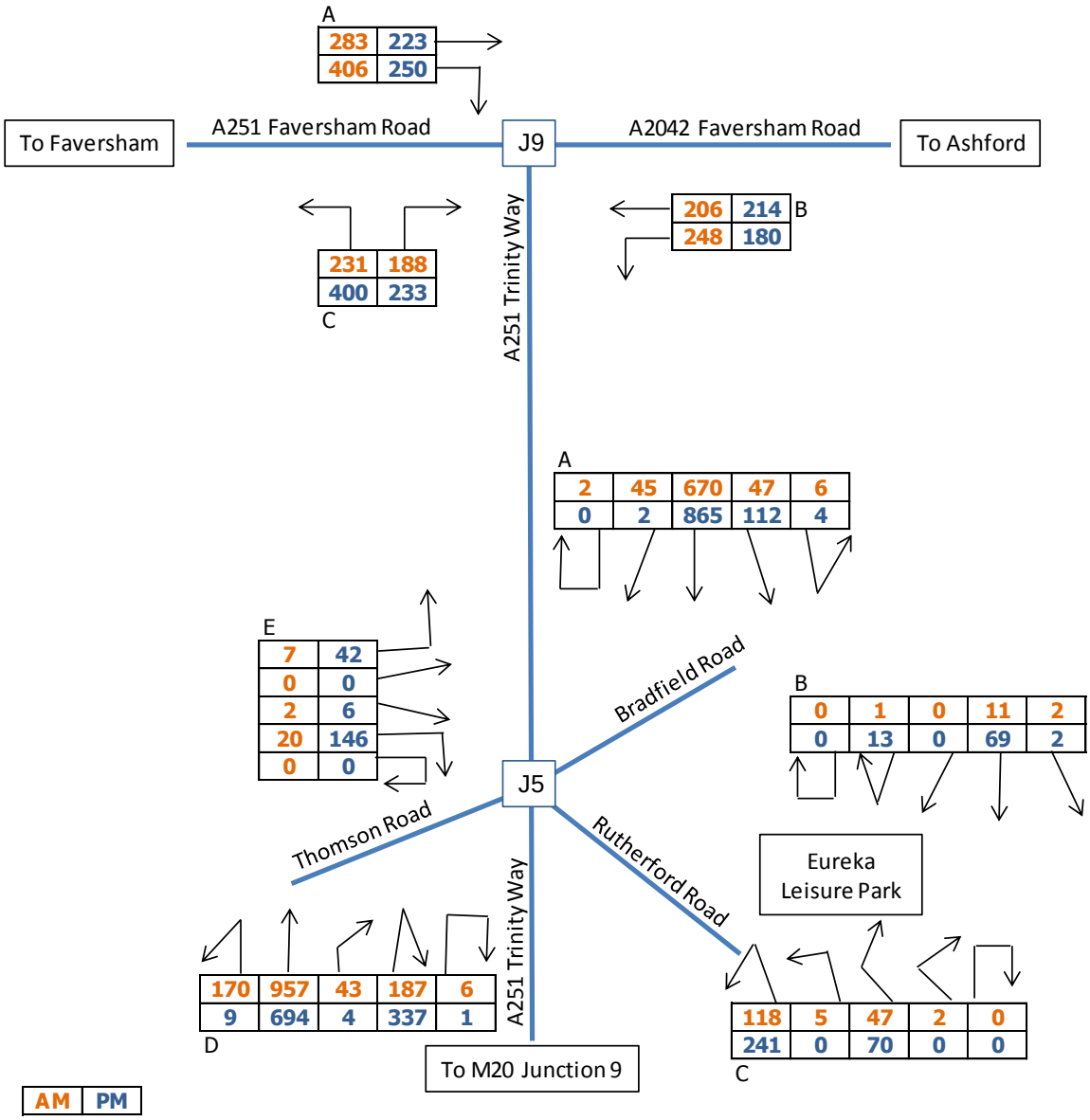
Kennnington Junctions

2031 'Core Scenario' Flows

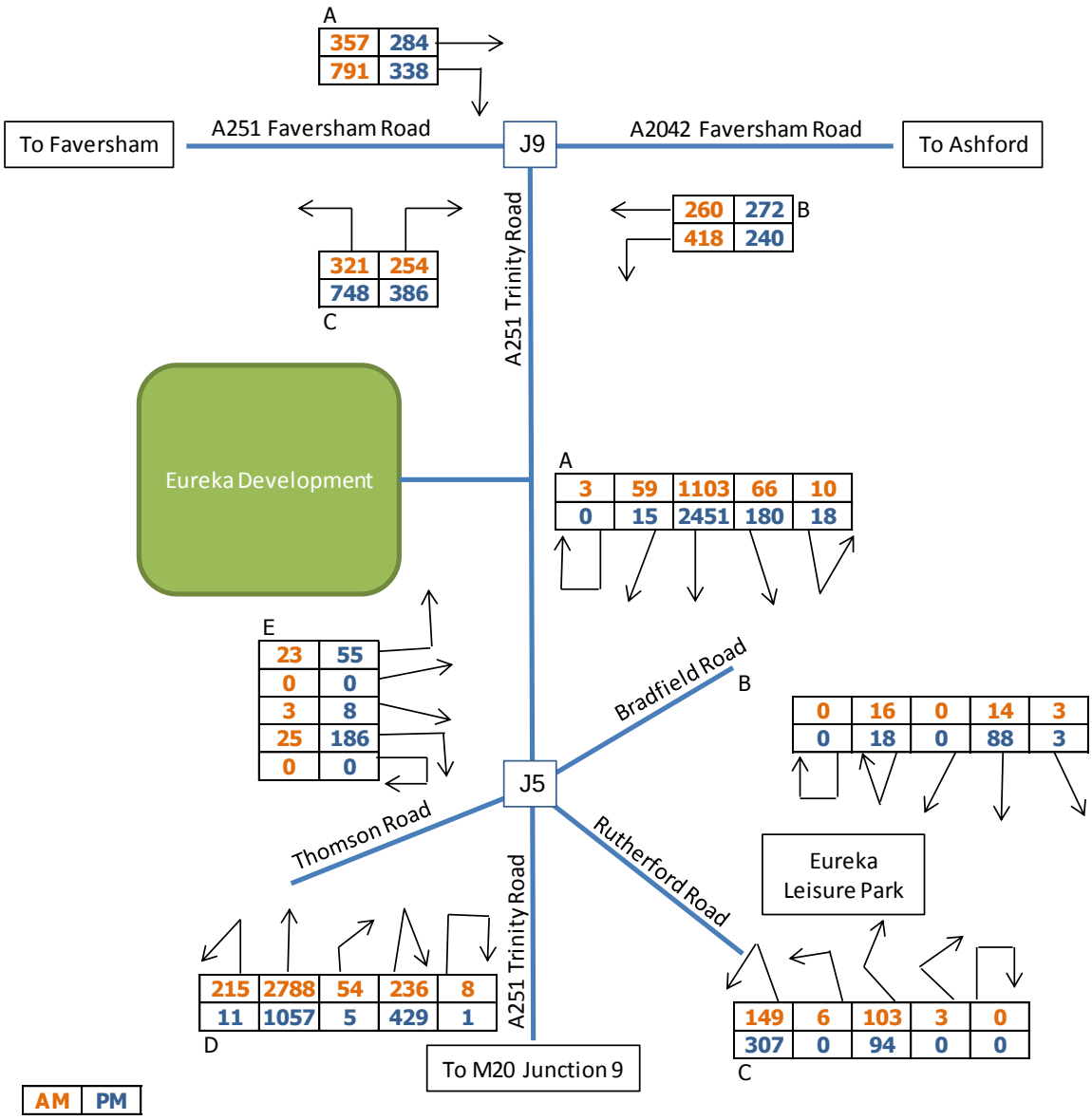


Eureka Junctions

2015 Observed Traffic Flows



Eureka Junctions
2031 'High Growth' Flows



Eureka Junctions
2031 'Core Scenario' Flows