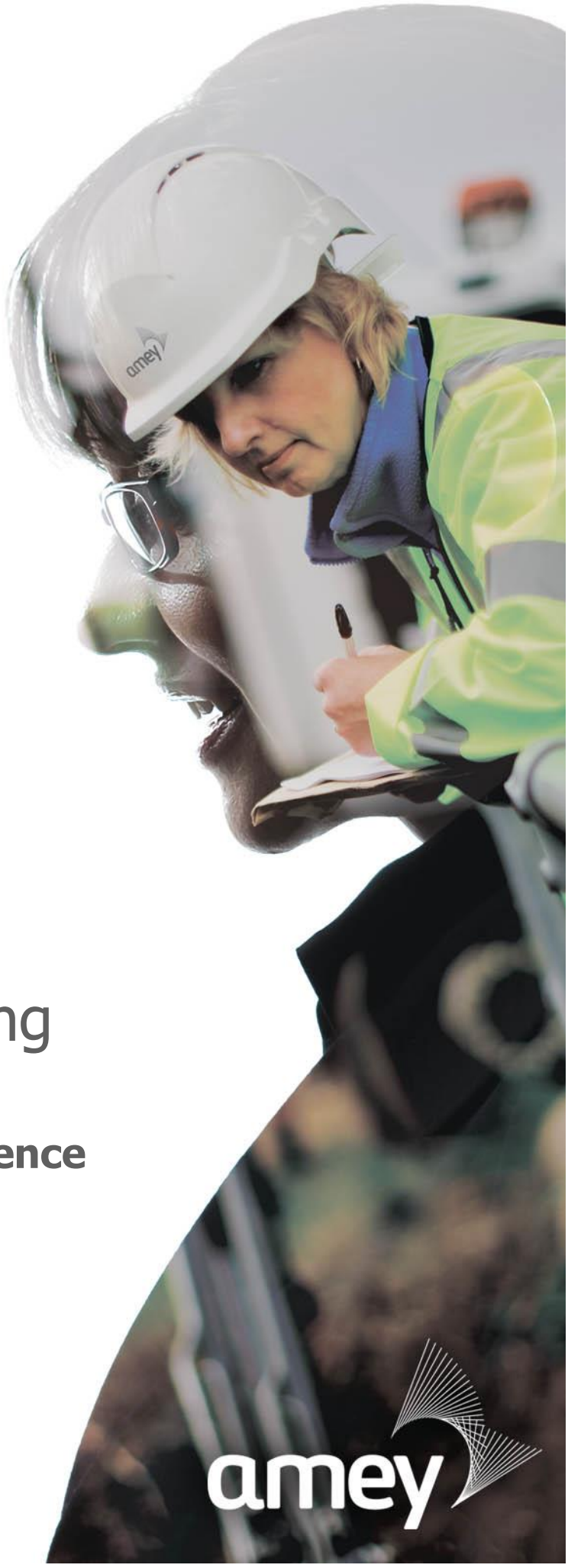

A28 & A256 Corridors – Existing Conditions Study

Thanet Local Plan Evidence Base

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Contents

1 Introduction

1.1 Overview

1.1.1 Amey have been commissioned by Kent County Council (KCC) to investigate the existing transport conditions along the A256/A254 corridor, from the A299 Hengist Way/A256 Richborough Way junction to the Victoria traffic lights in Margate, and the A28 corridor, from Birchington to A28 Marine Terrace/Marine Drive junction.

1.1.2 The purpose of the study is to provide a robust evidence base of 'typical' traffic conditions along the A28 and A256/A254 corridors. It is intended to form part of the evidence base supporting the emerging Thanet Local Plan.

1.1.3 The existing issues within the corridor have been identified through the analysis of various datasets as follows:

- Junction Turning Counts (JTCs);
- Queue Length Surveys;
- Average journey time data; and
- Personal injury crash records.

1.2 A256/A254 Study Corridor

1.2.1 The A256 is a key route in East Kent linking Thanet to Dover in the south. The road begins on the outskirts of Broadstairs, at a roundabout with the A255 and heads west past the Westwood retail park and becoming Haine Road at Westwood Cross roundabout.

1.2.2 The A256 Haine Road then continues south west on the western fringe of Newington housing estate towards the 'Lord of the Manor' (A256 Haine Road/ A299 Hengist Way/ A299 Canterbury Road East) junction. This junction provides access to Ramsgate to the east via the A255. At this point the A256 merges with the A299 Hengist Way, on the recently constructed East Kent Access dual carriageway, for less than two kilometres, before the A299 heads north and the A256 becomes Richborough Way and heads south towards Sandwich and on to Dover.

1.2.3 The A299 continues west meeting the A28 around 8km away, giving access to Canterbury in the south west and continuing on to become the Thanet Way, providing access to Herne Bay, Whitstable and Faversham before becoming the M2 towards West Kent and London.

1.2.4 This study will focus on the A256 and A254 between the junctions of A299 Hengist Way/A256 Richborough Way roundabout to Westwood Roundabout where the A256 meets the A254 which continues north to the 'Victoria Traffic Lights' (A254 Ramsgate Road/B2052 College Road) junction in Margate.

1.2.5 Due to the physical geography of Thanet, the A256 provides the primary access to and from southern Thanet from other East Kent towns to the south and the wider county west of Thanet.

1.2.6 Figure 1-1 shows the A256/A254 study area.

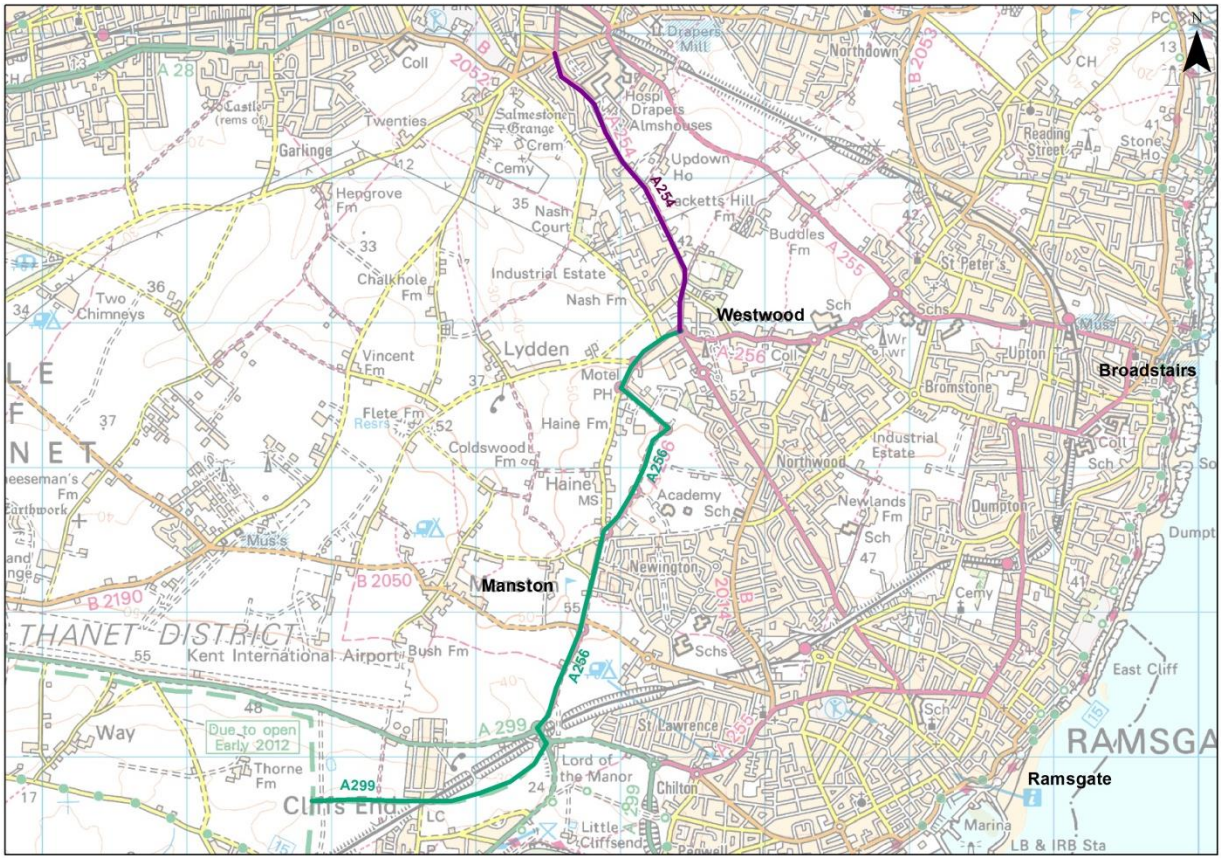

Figure 1-1: A256/A254 Corridor Study Area

1.3 A28 Study Corridor

1.3.1 The A28 links the seafront of Margate westwards to the A299 Thanet Way travelling through the villages of Birchington and Westgate-on-Sea. The road continues south west through Sarre and on to Sturry and Canterbury. It forms part of Canterbury's ring road before continuing further south west and eventually arriving in Ashford with a link to the M20 Motorway. The A28 then leaves Ashford on its south western side and heads towards the A21 just north of Hastings via Tenterden, Northiam in East Sussex and Brede.

1.3.2 This study will focus on the corridor between A299 Thanet Way/A28 Canterbury Road roundabout to the A28 Marine Terrace/Marine Drive junction on the seafront at Margate.

1.3.3 The A28 provides the primary access to and from northern Thanet from other Kent towns to the west.

1.3.4 Figure 1-2 shows the A28 study area.

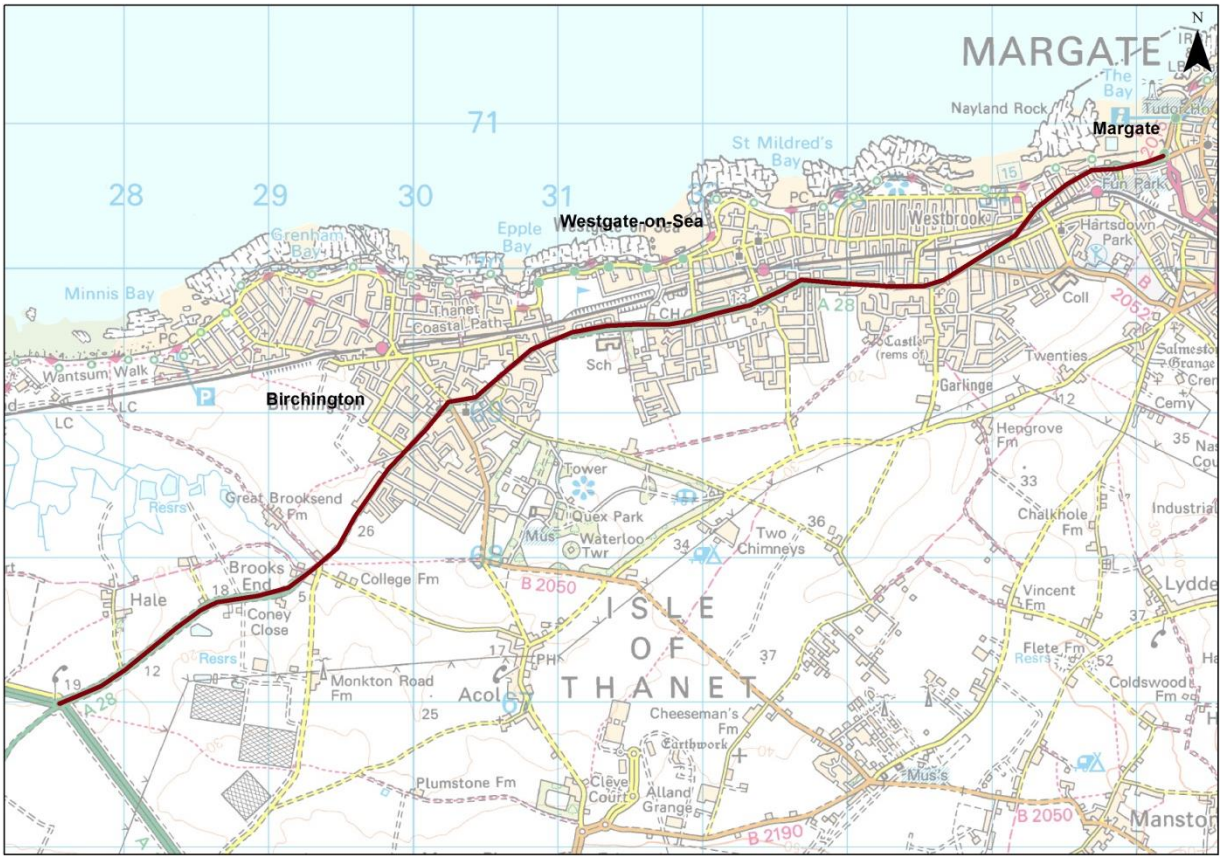

Figure 1-2: A28 Corridor Study Area

2 Policy Context

2.1 Introduction

2.1.1 As part of this commission, Amey has undertaken a review of national and local planning and transport policy to identify the overarching aims and objectives of the study. This section reviews national and local policy documents relevant to transport in the context of route studies of the A28 and A256 in Thanet.

2.2 National Policy

The National Planning Policy Framework March 2012

2.2.2 The National Planning Policy Framework (NPPF) was published in March 2012 and is designed to set out how planning authorities are expected to enable sustainable development. In order to achieve this it sets out an overarching presumption in favour of sustainable development, taking account of the three dimensions of:

- An economic role relating to building a strong responsive and competitive economy. In relation to the planning system this is fundamentally about ensuring that sufficient land is available to enable job creation, together with the infrastructure to support this;
- A social role in supporting strong, vibrant and healthy communities, with an emphasis on the provision of housing in the context of high-quality built environment and access to local services; and
- An environmental role in terms of protecting and enhancing the local environment and helping mitigate and adapt to climate change.

2.2.3 Transport and connectivity play a key role in all three dimensions and the NPPF contains a section which outlines this and sets out a number of key requirements in terms of planning and decision making by local planning authorities. Much of this is about limiting the impacts of developments and improving their long term sustainability.

"Transport policies have an important role to play in facilitating sustainable development but also in contributing to wider sustainability and health objectives… The transport system needs to be balanced in favour of sustainable transport modes, giving people a real choice about how they travel." (Paragraph 29)

2.2.4 The A28 and A256 corridors experience delays and congestion during peak periods.

"Encouragement should be given to solutions which support reductions in greenhouse gas emissions and reduce congestion." (Paragraph 30)

2.2.5 The A28 and A256 corridors experience congestion and are key routes into and out of the Thanet district. The corridors provide access to Margate and Broadstairs and the surrounding areas to the east of the district.

"Local planning authorities should identify and protect where there is robust evidence, sites and routes which could be critical in developing infrastructure to widen transport choice." (Paragraph 41)

2.3 Local Policy

Local Transport Plan 4: Delivering Growth without Gridlock 2016–2031

Kent's fourth Local Transport Plan (LTP4) sets out Kent County Council's Strategy and Implementation Plans for local transport investment for the period 2016-31. It is based on the evidence from 'Kent and Medway Growth and Infrastructure Framework 2 (GIF)'.

"LTP4 sets out our policies to deliver strategic outcomes for transport and is accompanied by implementation plans and a methodology for prioritising funding."

2.3.1 Kent County Council aims to achieve their transportation ambition through five overarching policies that are targeted at delivering specific outcomes (Table 2-1). All of these policies align with the vision in Increasing Opportunities, Improving Outcomes: KCC's Strategic Statement 2015 – 20203.

Policy	Outcome
Deliver resilient transport infrastructure and schemes that reduce congestion and improve journey time reliability to enable economic growth and appropriate development, meeting demand from a growing population.	Economic growth and minimised congestion
Promote affordable, accessible and connected transport to enable access for all to jobs, education, health and other services.	Affordable and accessible door-to-door journeys

Policy	Outcome
Provide a safer road, footway and cycleway network to reduce the likelihood of casualties, and encourage other transport providers to improve safety on their networks.	Safer travel
Deliver schemes to reduce the environmental footprint of transport and enhance the historic and natural environment.	Enhanced environment
Provide and promote active travel choices for all members of the community to encourage good health and wellbeing, and implement measures to improve local air quality.	Better health and wellbeing

Table 2-1: Kent Local Transport Plan 4 Policies

2.3.2 The LTP4 highlights that transport infrastructure has and will change the perceived isolation of Thanet, and remoteness from London, which has been a disincentive for investors and businesses. It states that the investment in road network, addressing the junctions, greater use of public transport and faster rail times to London can help Thanet unlock its development sites and maximise its potential. Some of the proposed transport priorities for Thanet are shown in Figure 2-1.

2.3.3 The Plan states the Westwood area is continuing to attract investment but recognises the area does suffer from traffic congestion and accessibility around the centre, particularly on foot, is not convenient. It identifies the scale of development will impact on the A256 and A254 intersection (Westwood roundabout).

2.3.4 The Plan identifies that the planned development around the A28 and A256 will be required to identify improvements to the surrounding road network in the Transport Assessment and be expected to provide an appropriate contribution to offsite highway improvements.

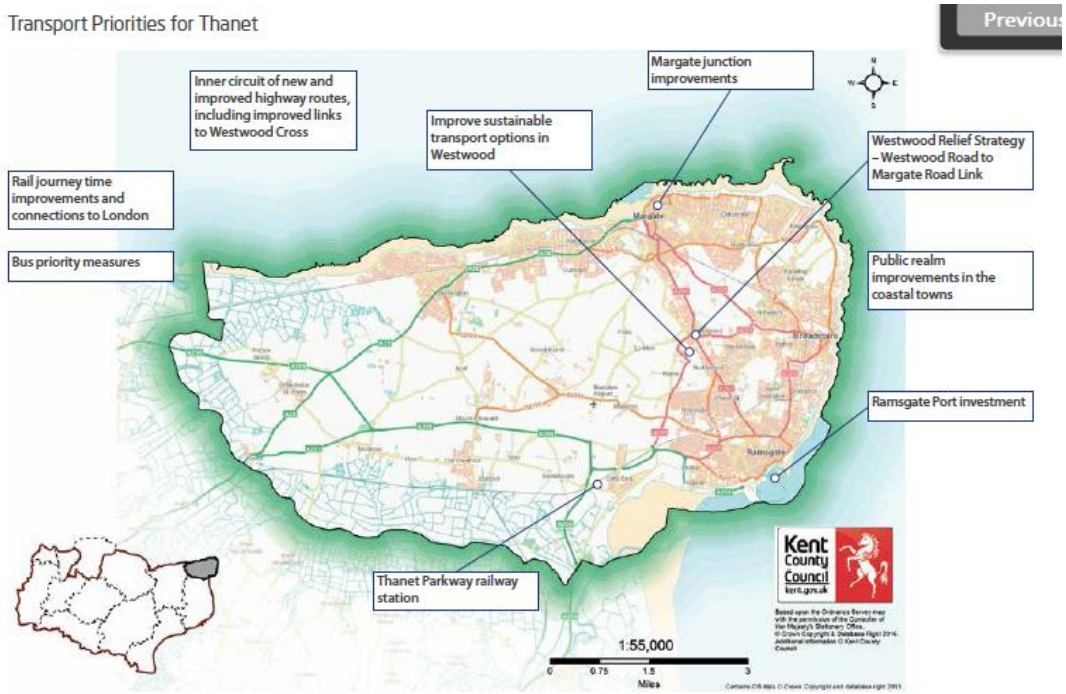

Figure 2-1: Transport Priorities for Thanet.

Air Quality - Thanet Annual Status Report, 2016

2.3.5 The requirements of the Local Air Quality Management (LAQM) process, as set out in Part IV of the Environment Act (1995), requires a regular review and assessment of air quality in Thanet by the Local Authority and to determine whether or not the Air Quality Strategy (AQS) objectives are likely to be achieved. Where an exceedance is considered likely the local authority must declare an Air Quality Management Area (AQMA) and prepare an Air Quality Plan (AQP) setting out the measures it intends to put in place to work towards the objectives.

2.3.6 The document notes that the main source of air pollution in Thanet is road traffic emissions from major roads, A28, A299, A254, A255 and A256.

2.3.7 An AQMA was declared in March 2006 for The Square, Birchington, where exceedances of the annual mean objective for nitrogen dioxide (NO_2) were predicted. A second AQMA was declared at High Street, St Lawrence in April 2010. These two AQMAs were incorporated into a single Thanet Urban AQMA in 2011. The area encompasses the main urban extent of Thanet and is monitoring the NO_2 annual mean.

3 A256 Haine Road - Current Traffic Conditions

3.1 Overview

3.1.1 Existing traffic conditions along the A256 corridor have been captured through traffic data collection and analysis. The following surveys have been undertaken at key junctions within the study area:

- Junction Turning Counts (JTC); and
- Queue Length Surveys.

3.1.2 In addition, average journey times have been established through the corridor using Highways Analyst software. Furthermore, personal injury crash records have been analysed to determine historic highway safety considerations within the corridor.

3.1.3 The data has been analysed in order to better understand traffic movements and identify where issues exist. The following section presents the analysis for each survey.

3.2 Junction Operation

3.2.1 JTC surveys were provided by third parties and the queue length surveys were collected as part of this study to further contribute to the understanding of the operation of the major junctions along the study corridor. Queue length surveys were undertaken only at junctions observed to experience delays during site visits in the weekday AM and PM peak periods. Junctions where queue length surveys were not undertaken are identified in the list below.

3.2.2 The following junctions have been assessed as part of this study:

Junction 1 – A299 Hengist Way/A256 Richborough Way;
Junction 2 – A299 Hengist Way/Canterbury Rd East/A256 Haine Rd;
Junction 3 – A256 Haine Rd/B2050 Manston Rd;
Junction 4 – A256 Haine Rd/St John's Ave (no queue length survey);
Junction 5 – A256 New Haine Rd/Old Haine Rd (south);
Junction 6 – A256 New Haine Rd/New Cross Rd;
Junction 7 – A256 New Haine Rd/Old Haine Rd (north);
Junction 8 – A256 Haine Rd/Star Lane Link/Westwood Cross;
Junction 9 – A256 Haine Rd/A254 Margate Rd (Westwood roundabout);
Junction 10 – A254 Margate Rd/Star Lane/Poorhole Lane; and
Junction 11 – A254 Ramsgate Rd/B2052 College Rd (Victoria Traffic Lights).

3.2.3 An additional 2 junctions were surveyed in May 2017 these junctions were:

Junction 12 – A254 Ramsgate Rd / Enterprise Rd;

Junction 13 - A254 Ramsgate Road / Queen Elizabeth Queen Mother Hospital.

3.2.4 The locations of the junction turning count surveys are shown in Figure 3-1.

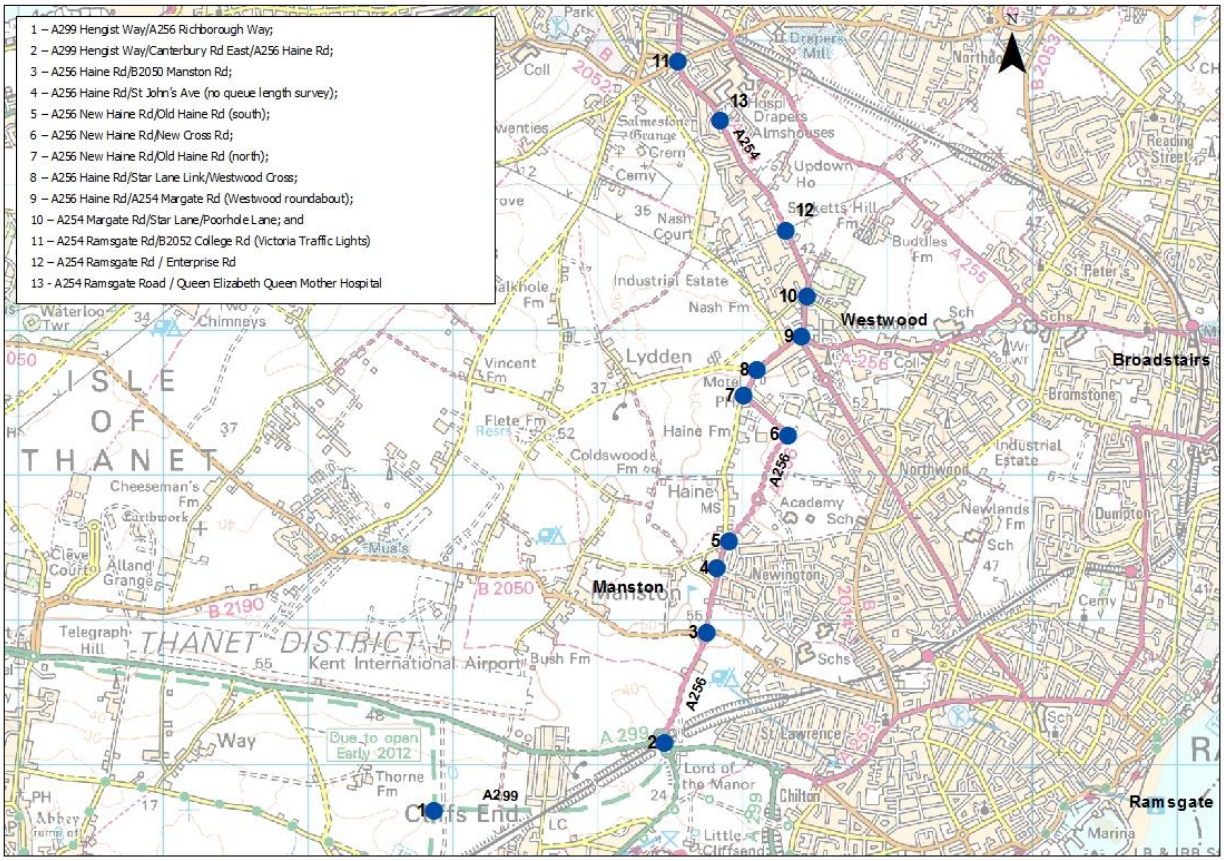

Figure 3-1: A256/A254 Corridor - Junction Turning Count Survey Locations

3.2.5 The JTC surveys were carried out on Tuesday 12th January 2017 between the hours of 07:30 and 09:30, and 16:30 and 18:30. Queue length surveys were carried out at each junction identified above, on Wednesday 1st March 2017.

3.2.6 The additional junction surveys were carried out on Wednesday 24th May 2017 between the hours of 07:00 and 10:00, and 16:00 and 19:00. Queue length surveys were carried out simultaneously with the junction turning counts.

3.2.7 The data is intended to provide a snapshot of existing traffic conditions along the A256/A254 corridor. The specific weekday AM and PM peak hours have been determined for each individual junction and reported in Table 3-1.

Location		Weekday AM Peak	Weekday PM Peak
1	A299 Hengist Way/ A256 Richborough Way	07:30-08:30	16:45-17:45
2	A299 Hengist Way/ Canterbury Rd East/ A256 Haine Rd	07:30-08:30	16:45-17:45
3	A256 Haine Rd/ B2050 Manston Rd	07:45-08:45	16:45-17:45
4	A256 Haine Rd/ St John's Ave	07:45-08:45	16:45-17:45
5	A256 New Haine Rd/ Old Haine Rd (south)	08:00-09:00	17:00-18:00
6	A256 New Haine Rd/ New Cross Rd	08:00-09:00	17:00-18:00
7	A256 New Haine Rd/ Old Haine Rd (north)	07:45-08:45	17:00-18:00
8	A256 Haine Rd/ Star Lane Link/ Westwood Cross	08:00-09:00	16:30-17:30
9	A256 Haine Rd/ A254 Margate Rd	08:15-09:15	16:30-17:30
10	A254 Margate Rd/ Star Lane/ Poorhole Lane	08:00-09:00	16:30-17:30
11	A254 Ramsgate Rd/ B2052 College Rd (Victoria Traffic Lights)	07:45-08:45	16:30-17:30
12	A254 Ramsgate Rd /Enterprise Rd	08:30-09:30	16:00-17:00
13	A254 Ramsgate Road / Queen Elizabeth Queen Mother Hospital	08:45-09:45	16:15-17:15

Table 3-1: A256/A254 Corridor - Peak Hour by Junction

3.2.8 The queue length results tables have been colour coded with a RAG rating in order to easily identify lengths of queues across the surveyed hour. Table 3-2 provides the key to the queue length tables in the following sections.

Queue Length	Approximate Distance (m)
0 – 9 vehicles	0 - 52
10-19 vehicles	58 - 110
20-29 vehicles	115 - 167
30 + vehicles	173+

Table 3-2: Queue Length RAG Ratings

Junction 1 – A299 Hengist Way/A256 Richborough Way

3.2.9 The A299 Hengist Way/ A256 Richborough Way junction is located at the south western extent of the study corridor. The northern arm connects the A299 westwards to the Thanet Way and the A28 towards Canterbury with the A256 which continues south to Sandwich and Dover. A299 Hengist Way east continues to Ramsgate and re-joins the A256 which heads north towards Westwood Cross.

Observed Traffic Movements

3.2.10 The peak hour turning movements are shown in Figure 3-2.

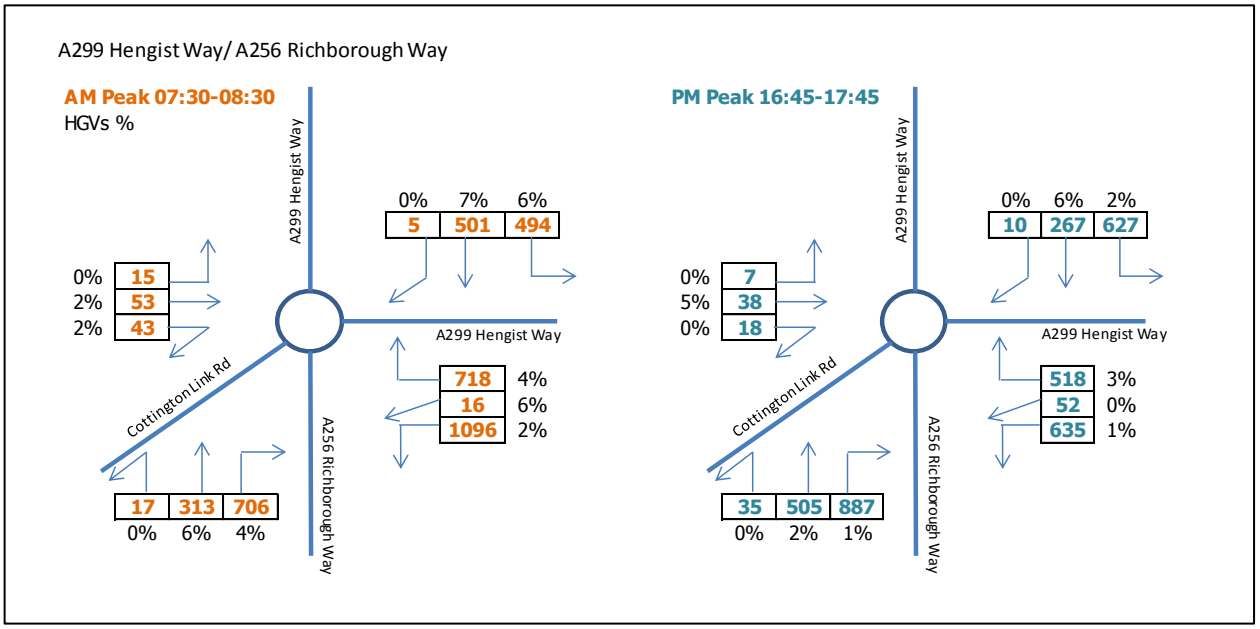

Figure 3-2: A299 Hengist Way/A256 Richborough Way – Turning Movements (Vehicles)

3.2.11 Figure 3-2 shows that the AM peak is the busiest peak at this junction; however, the flows in the PM peak are not significantly less. In the AM peak the A299 Hengist Way

(east) has the highest total flow with over 1,000 vehicles turning left onto A256 Richborough Way and over 700 turning right onto A299 Hengist Way (north).

3.2.12 From the A256 Richborough Way the dominant turning movement in both the AM and PM peaks is the right turn to A299 Hengist Way east. The turning movements from A299 Hengist Way (north) are fairly balanced in the AM peak heading east and south. In the PM peak these movements are much less balanced with around 70% turning left to A299 Hengist Way and nearly 30% heading straight. In both peak periods there is a very small flow entering and exiting the Cottington Link Road arm.

Observed Queue Lengths

3.2.13 Table 3-3 displays the queue lengths (in vehicles) at this junction across the AM and PM peak hours. It highlights that queueing of over 20 vehicles occurs on four occasions across the AM hour peak on the A299 Hengist Way east arm of this junction. Across most of the AM peak there is queueing of between 10-19 vehicles in both Lanes of this arm.

3.2.14 Lane 2 of the A256 Richborough Way arm also experiences queueing of between 10-19 vehicles throughout the AM peak hour. In the PM peak, the queueing on this arm in Lane 2 is consistently above 20 vehicles or just below. For about half of this surveyed period, queueing is between 10-19 vehicles in Lane 1 of this arm. Queueing on other arms of this junction in the PM peak is always far below 10 vehicles.

	A299 Hengist Way N		**A299 Hengist Way E**		**A256 Richborough Way**		**Cottington Link Rd**
Time	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
07:30-07:35	4	1	13	11	3	5	3
07:35-07:40	4	2	18	9	5	13	2
07:40-07:45	2	2	21	8	5	14	5
07:45-07:50	4	2	23	13	3	12	2
07:50-07:55	3	1	13	12	4	18	3
07:55-08:00	6	2	12	10	7	18	5
08:00-08:05	2	2	22	11	2	11	2
08:05-08:10	5	5	20	7	3	18	1
08:10-08:15	4	1	19	12	10	18	8
08:15-08:20	5	4	14	10	4	19	9
08:20-08:25	3	2	8	8	2	21	2
08:25-08:30	2	3	4	6	3	17	2
Total	**44**	**27**	**187**	**117**	**51**	**184**	**44**
16:45-16:50	2	1	4	4	10	29	2

	A299 Hengist Way N		A299 Hengist Way E		A256 Richborough Way		Cottington Link Rd
16:50-16:55	3	3	3	4	4	25	1
16:55-17:00	5	3	3	5	2	12	3
17:00-17:05	2	3	3	5	2	6	2
17:05-17:10	5	2	4	6	19	22	1
17:10-17:15	5	1	6	5	18	19	2
17:15-17:20	3	2	8	4	11	21	2
17:20-17:25	2	1	3	4	10	25	2
17:25-17:30	3	1	7	3	5	24	3
17:30-17:35	3	1	7	4	16	21	4
17:35-17:40	3	4	6	4	10	22	4
17:40-17:45	4	3	7	3	7	19	5
Total	**40**	**25**	**61**	**51**	**114**	**245**	**31**

Table 3-3: A299 Hengist Way/A256 Richborough Way – Queue Lengths (Vehicles)

Junction 2 – A299 Hengist Way/ Canterbury Rd East/ A256 Haine Rd

3.2.15 The A299 Hengist Way/Canterbury Road east/A256 Haine Road junction (known locally as The Lord of the Manor) consists of a 4-arm signalised roundabout junction on the southern side leading to a smaller 3-arm configuration to the north. Following the completion of East Kent Access, further traffic calming was introduced at the smaller northern roundabout to encourage greater transfer of trips from A256 Haine Road to the new sections of A299 and A256. This prevents vehicles travelling west through Cliffsend from the A256 Haine Road and forces them south to the large roundabout and onto the A299 Hengist Way.

Observed Traffic Movements

3.2.16 The peak hour turning movements are shown in Figure 3-3.

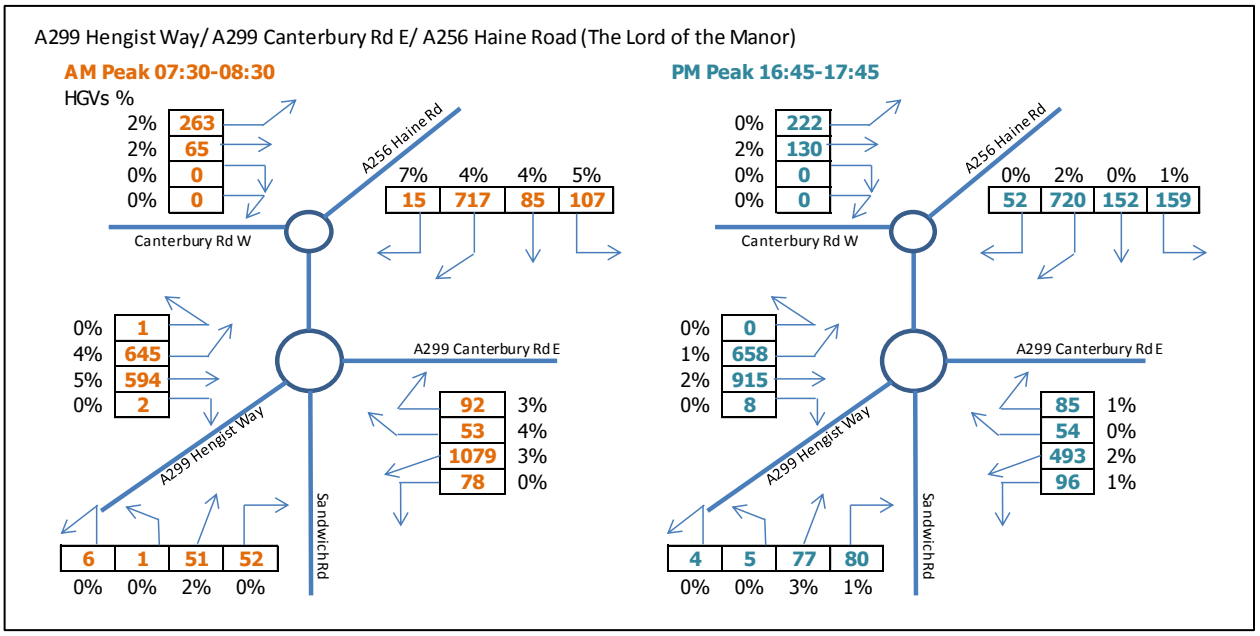

Figure 3-3: The Lord of the Manor – Turning Movements (Vehicles)

3.2.17 In the AM peak, 645 vehicles were observed travelling from A299 Hengist Way to A256 Haine Road and there are 717 vehicles making the reverse of this movement. In the PM peak, a very similar number of vehicles (658) travel from A299 Hengist Road to A256 Haine Road whilst a similar number is also making the reverse of this movement (720 vehicles).

3.2.18 The peak hour traffic flows demonstrate that in the AM there are over 1,000 vehicles travelling from A299 Canterbury Road East westwards to the A299 Hengist Way. In the PM peak, just over 900 vehicles are making the return trip eastwards from A299 to Canterbury Road East. In both peak periods, approximately half of each flow is making the reverse of these movements. Therefore more vehicles are exiting Thanet via this route than entering in the AM peak and vice versa in the PM peak.

3.2.19 Over 200 vehicles in both the AM and PM peak hours travel west from Canterbury Road West to the A256 Haine Road. The returning flow in both peak hours from A256 Haine Road is around 30 vehicles. This could potentially be due to vehicles trying to avoid perceived queueing on the A299 Hengist Way through the signal controlled southern roundabout and continuing to use Cliffsend as a through route.

Observed Queue Lengths

3.2.20 Table 3-4 displays the queue lengths (in vehicles) at this junction across the AM peak hour. It identifies that on the A256 Canterbury Road west and A299 Canterbury Road east there are occasional periods of longer queues of just over 10 vehicles in both

lanes of both arms, however, in general the level of queueing is not considered to be severe.

A256 Canterbury Rd W			**A299 Canterbury Rd E**			**Sandwich Rd**		**A299 Hengist Way**			
Signal Change	Lane 1	Lane 2	Signal Change	Lane 1	Lane 2	Time	Lane 1	Signal Change	Lane 1	Lane 2	Lane 3
07:30:14	4	6	07:30:45	8	6	07:30-07:35	3	07:30:25	3	0	0
07:31:09	6	6	07:31:56	10	5	07:35-07:40	3	07:30:49	2	0	0
07:32:11	8	5	07:33:06	8	5	07:40-07:45	3	07:31:24	0	1	0
07:33:34	4	5	07:34:20	9	3	07:45-07:50	1	07:31:52	0	3	0
07:34:49	5	7	07:35:38	9	6	07:50-07:55	9	07:32:23	3	1	0
07:36:00	9	9	07:36:32	7	3	07:55-08:00	7	07:32:51	3	1	0
07:37:04	3	4	07:37:37	10	7	08:00-08:05	3	07:33:36	3	1	0
07:37:57	9	3	07:39:04	8	8	08:05-08:10	4	07:34:07	1	0	0
07:39:27	8	10	07:40:16	7	2	08:10-08:15	5	07:34:47	2	1	0
07:40:39	6	7	07:41:26	15	2	08:15-08:20	6	07:35:34	2	0	0
07:41:43	7	14	07:42:38	10	7	08:20-08:25	4	07:36:09	6	2	1
07:42:59	9	8	07:44:12	7	6	08:25-08:30	6	07:36:52	3	1	0
07:44:35	9	6	07:45:04	11	12			07:37:27	1	0	0
07:45:29	4	3	07:46:18	10	8			07:39:55	2	1	0
07:46:35	12	12	07:47:10	10	8			07:40:28	1	0	0
07:47:40	2	3	07:48:19	9	6			07:40:57	1	2	0
07:48:36	6	12	07:49:26	5	3			07:41:40	4	3	0
07:49:51	8	8	07:52:15	14	13			07:42:19	0	2	0
07:51:43	11	15	07:54:13	12	12			07:43:09	2	1	0
07:52:22	13	12	07:56:28	11	10			07:43:53	0	3	0
07:54:15	15	13	07:58:22	13	5			07:44:20	2	2	0
07:56:14	10	10	08:00:11	14	6			07:44:48	4	0	0
07:56:52	8	10	08:01:42	12	4			07:45:20	2	2	0
07:58:28	12	13	08:03:34	10	7			07:45:55	3	2	0
08:00:19	11	13	08:05:05	9	6			07:47:03	2	1	0
08:02:05	14	13	08:06:10	13	2			07:47:37	6	0	0
08:03:38	11	13	08:08:50	18	16			07:48:19	1	0	0
08:05:14	8	10	08:10:31	16	10			07:48:53	1	2	0
08:06:38	4	4	08:11:56	6	2			07:49:28	1	1	0
08:08:15	14	12	08:13:16	6	4			07:50:08	2	3	0
08:09:00	9	15	08:14:10	9	10			07:50:47	7	1	0
08:10:44	15	12	08:15:18	7	11			07:51:27	7	4	0
08:12:24	8	8	08:16:31	12	4			07:52:00	1	1	0
08:13:41	9	5	08:18:25	17	4			07:52:39	3	2	0
08:14:41	6	5	08:20:01	9	9			07:53:21	9	4	0
08:15:44	4	9	08:21:31	9	9			07:53:57	5	4	0
08:16:51	15	8	08:23:01	10	7			07:54:10	0	2	0
08:18:30	14	11	08:24:30	14	7			07:54:58	1	5	1
08:20:14	15	6	08:26:00	12	4			07:55:47	1	2	1

A256 Canterbury Rd W			A299 Canterbury Rd E			Sandwich Rd		A299 Hengist Way			
08:21:44	8	7	08:27:30	8	7			07:56:21	1	0	0
08:23:14	10	4	08:29:01	7	3			07:57:36	4	3	1
08:24:45	11	10						07:58:11	1	3	0
08:26:14	13	5						07:58:42	2	3	0
08:27:44	11	11						07:59:32	2	3	2
08:29:14	10	9						08:00:01	1	0	1
								08:00:46	0	2	0
								08:01:21	3	1	0
								08:01:46	3	1	1
								08:02:18	1	1	1
								08:03:15	1	0	0
								08:03:42	2	0	0
								08:04:15	4	2	0
								08:05:06	3	5	0
								08:05:33	0	4	0
								08:06:14	0	7	0
								08:06:59	0	2	0
								08:07:32	4	2	2
								08:08:25	0	1	0
								08:08:49	4	2	0
								08:09:52	1	2	0
								08:10:28	7	2	1
								08:11:16	8	1	0
								08:12:02	4	0	1
								08:12:40	0	1	0
								08:13:15	0	1	0
								08:13:48	0	2	0
								08:14:37	4	1	0
								08:15:07	2	2	0
								08:15:43	0	2	0
								08:16:17	2	2	3
								08:16:58	2	2	1
								08:17:45	4	6	2
								08:18:30	0	5	0
								08:18:54	2	7	0
								08:19:28	6	2	0
								08:20:34	2	4	4
								08:21:14	3	3	0
								08:22:11	3	5	0
								08:22:42	2	7	0
								08:23:01	0	7	0
								08:23:35	2	11	0
								08:24:23	3	5	0
								08:25:04	3	4	2

A256 Canterbury Rd W			A299 Canterbury Rd E			Sandwich Rd		A299 Hengist Way			
								08:26:05	1	8	0
								08:26:56	3	1	0
								08:27:32	1	2	1
								08:28:15	3	5	1
								08:29:25	5	2	0

Table 3-4: The Lord of the Manor – AM Peak Queue Lengths (Vehicles)

3.2.21 Table 3-5 displays the queue lengths at this junction across the PM peak hour. Similar queues occur on the A256 Canterbury Road west and A299 Canterbury Road east arms of this junction as was observed in the AM peak, of just over 10 vehicles.

3.2.22 The most significant queuing was recorded for a short period on the A299 Hengist Way with lane 2 observing a maximum queue length of 24 vehicles.

A256 Canterbury Rd W			A299 Canterbury Rd E			Sandwich Rd		A299 Hengist Way			
Signal Change	Lane 1	Lane 2	Signal Change	Lane 1	Lane 2	Time	Lane 1	Signal Change	Lane 1	Lane 2	Lane 3
16:45:38	8	5	16:45:36	9	1	16:45-16:50	3	16:45:06	1	3	2
16:47:08	2	8	16:47:09	9	3	16:50-16:55	2	16:45:37	0	3	0
16:48:38	10	10	16:48:39	9	6	16:55-17:00	3	16:46:30	4	4	1
16:50:08	6	6	16:50:09	11	7	17:00-17:05	6	16:47:14	4	2	3
16:51:38	3	9	16:51:41	13	7	17:05-17:10	4	16:48:01	2	1	1
16:53:07	11	4	16:53:10	7	1	17:10-17:15	6	16:49:05	0	6	0
16:54:39	10	6	16:54:40	9	2	17:15-17:20	8	16:50:06	3	7	1
16:56:09	10	5	16:56:10	8	2	17:20-17:25	7	16:51:00	0	3	2
16:57:38	5	10	16:57:39	6	2	17:25-17:30	6	16:51:46	2	3	1
16:59:10	11	4	16:59:09	9	4	17:30-17:35	13	16:52:17	1	1	0
17:00:39	6	6	17:00:40	7	2	17:35-17:40	10	16:52:48	1	2	0
17:02:09	7	6	17:02:40	7	1	17:40-17:45	10	16:53:26	1	0	1
17:03:38	2	5	17:03:39	7	3			16:54:15	0	1	0
17:05:08	13	6	17:05:09	10	5			16:54:49	1	4	1
17:06:36	11	6	17:06:39	9	1			16:55:14	4	3	2
17:08:09	4	14	17:08:10	11	7			16:56:06	0	8	4
17:09:36	8	7	17:09:40	7	3			16:56:34	0	9	5
17:11:06	8	5	17:11:08	14	7			16:57:13	2	0	0
17:12:37	7	7	17:12:39	8	5			16:57:48	1	7	6
17:14:07	7	6	17:14:09	11	7			16:58:34	4	2	1
17:15:36	7	7	17:15:39	13	6			16:59:21	2	8	1
17:17:06	9	8	17:17:08	6	0			16:59:51	1	6	1
17:18:36	7	11	17:18:38	15	2			17:00:32	0	2	2
17:20:07	10	13	17:20:08	14	5			17:01:10	0	2	0
17:21:38	9	11	17:21:38	10	3			17:01:31	0	1	0
17:23:06	14	8	17:23:08	11	10			17:01:50	2	1	0

A256 Canterbury Rd W			A299 Canterbury Rd E			Sandwich Rd		A299 Hengist Way			
17:24:36	12	8	17:24:38	7	6			17:02:15	2	2	0
17:26:06	9	7	17:26:08	8	6			17:02:54	0	3	2
17:27:37	8	10	17:27:37	9	4			17:03:28	1	3	0
17:29:06	11	11	17:29:07	13	5			17:04:06	6	5	3
17:30:36	6	9	17:30:37	3	3			17:04:54	2	10	0
17:32:06	8	5	17:32:07	8	5			17:05:08	0	14	0
17:33:35	10	10	17:33:36	7	1			17:06:00	1	2	1
17:35:06	7	10	17:35:06	10	5			17:06:36	0	4	0
17:36:35	12	5	17:36:37	6	2			17:07:02	4	5	4
17:38:05	8	14	17:38:06	14	9			17:07:44	1	3	0
17:39:35	7	6	17:39:37	3	2			17:08:07	0	8	3
17:41:05	11	9	17:41:06	6	4			17:08:31	3	9	3
17:42:34	3	7	17:42:37	4	5			17:09:41	2	11	5
17:44:05	9	7	17:44:06	8	2			17:10:30	6	4	0
								17:11:06	0	3	0
								17:11:43	5	2	0
								17:12:12	3	3	2
								17:12:36	0	1	0
								17:12:56	2	4	3
								17:13:29	2	2	1
								17:14:03	3	1	1
								17:14:46	0	2	1
								17:15:06	0	2	0
								17:15:46	2	7	0
								17:16:34	5	5	0
								17:17:13	1	5	0
								17:17:43	2	9	1
								17:18:25	4	3	0
								17:19:00	2	13	3
								17:19:38	4	7	0
								17:20:05	8	10	2
								17:21:14	3	1	1
								17:21:36	0	9	2
								17:22:23	0	3	1
								17:23:07	0	10	0
								17:23:25	4	10	5
								17:24:22	1	4	2
								17:25:12	1	4	1
								17:26:16	1	13	2
								17:27:29	6	6	1
								17:28:06	3	5	0
								17:28:44	0	2	0
								17:29:08	0	5	1
								17:29:41	5	4	2

A256 Canterbury Rd W			A299 Canterbury Rd E			Sandwich Rd		A299 Hengist Way			
								17:30:44	5	14	3
								17:31:42	0	4	0
								17:32:36	2	6	0
								17:33:32	2	13	6
								17:34:32	3	6	0
								17:35:09	1	13	6
								17:36:22	5	9	0
								17:36:52	0	14	5
								17:37:30	4	13	3
								17:38:20	5	14	11
								17:39:22	3	12	10
								17:40:03	0	15	13
								17:41:04	3	22	12
								17:42:26	15	24	14
								17:43:13	13	16	15
								17:44:05	13	15	13

Table 3-5: The Lord of the Manor – PM Peak Queue Lengths (Vehicles)

Junction 3 – A256 Haine Rd/B2050 Manston Rd

3.2.23 The A256 Haine Road/Manston Road junction consists of a roundabout and neighbouring priority junction. It connects the A256 Haine Road corridor to Manston to the west (via the roundabout) and Ramsgate to the east (via the priority junction).

Observed Traffic Movements

3.2.24 The peak hour turning movements are shown in Figure 3-4.

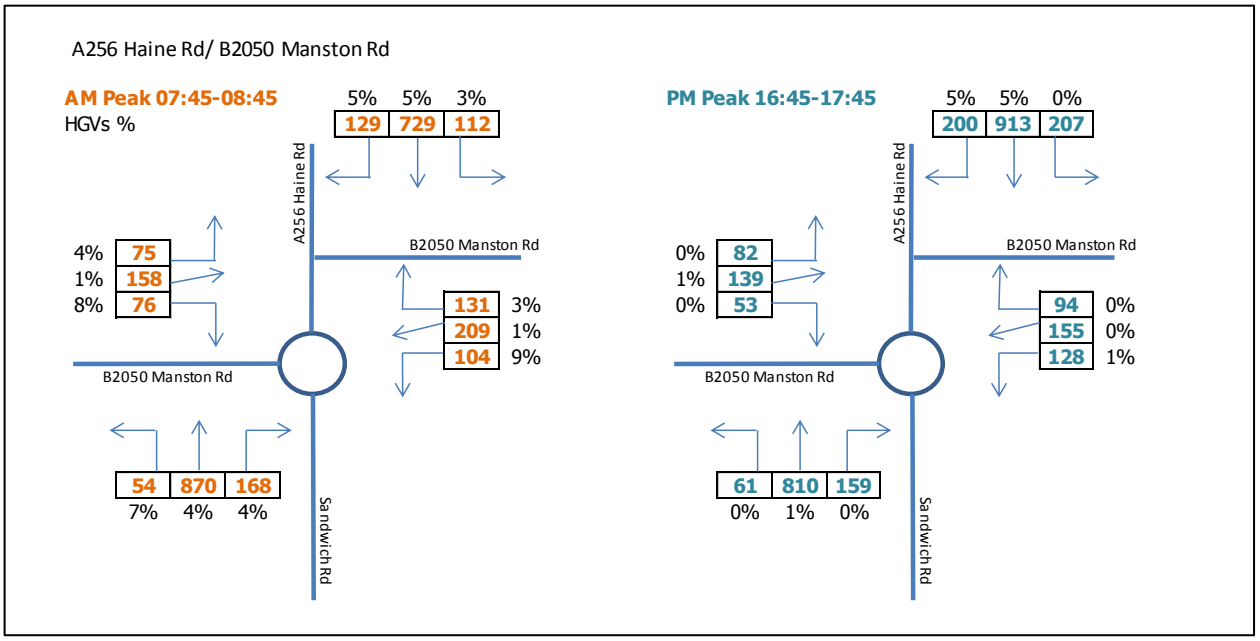

Figure 3-4: A256 Haine Rd/B2050 Manston Rd – Turning Movements (Vehicles)

3.2.25 The peak hour flows at this junction demonstrate that the dominant flow is on the A256 Haine Road with between 729 and 913 vehicles travelling in each direction during the peak periods.

3.2.26 It should also be noted that there are also a relatively high number of conflicting movements in and out of the minor arms. For example, in the AM peak there are over 300 vehicles turning out of B2050 Manston Road (from the west) and over 400 turning out of the B2050 Manston Road (from the east). This is a similar pattern to that in the PM peak hour.

Observed Queue Lengths

3.2.27 Table 3-6 displays the queue length survey results for the A256 Haine Road/ B2050 Manston Road roundabout and priority junction for both peak periods. The table demonstrates that some significant queueing of over 20 vehicles occurs in the AM peak hour in Lane 1 of the A256 Haine Road south arm of this junction.

3.2.28 In the PM peak hour significant queues of over 20 vehicles was recorded on 3 of the 4 arms of the junction. In particular, Lane 2 of the A256 Haine Road north and Lane 1 of the B2050 Manston Road west observed more sustained levels of high queues. The queueing and associated delay observed at this junction is likely due to dominant flow on the A256 combined with relatively high conflicting movement flows as described above.

	A256 Haine Road N		**B2050 Manston Rd E**		**A256 Haine Rd S**		**B2050 Manston Rd W**	
Signal Change	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
07:45-07:50	0	5	2	8	16	2	5	0
07:50-07:55	1	0	3	10	20	3	8	0
07:55-08:00	1	0	2	7	20	3	10	0
08:00-08:05	0	0	4	7	16	1	7	0
08:05-08:10	1	0	3	3	18	2	8	0
08:10-08:15	0	0	2	6	14	4	7	1
08:15-08:20	0	0	2	12	12	2	12	0
08:20-08:25	0	0	4	10	24	1	18	0
08:25-08:30	0	0	1	9	24	2	19	0
08:30-08:35	0	0	3	10	17	1	10	0
08:35-08:40	1	0	2	5	10	1	6	0
08:40-08:45	1	0	1	3	13	1	9	1
Total	**5**	**5**	**29**	**90**	**204**	**23**	**119**	**2**

	A256 Haine Road N		B2050 Manston Rd E		A256 Haine Rd S		B2050 Manston Rd W	
16:45-16:50	0	11	2	8	10	1	5	0
16:50-16:55	1	26	5	9	19	2	4	0
16:55-17:00	1	4	3	9	13	2	2	0
17:00-17:05	4	27	3	8	7	3	10	1
17:05-17:10	1	26	5	9	12	2	7	0
17:10-17:15	2	15	6	12	8	2	22	1
17:15-17:20	1	25	3	8	19	1	11	0
17:20-17:25	1	26	2	7	16	2	4	1
17:25-17:30	1	11	3	7	8	1	9	1
17:30-17:35	2	0	3	4	10	3	28	1
17:35-17:40	0	6	3	9	24	8	25	1
17:40-17:45	2	0	3	6	18	3	22	0
Total	**16**	**177**	**41**	**96**	**164**	**30**	**149**	**6**

Table 3-6: A256 Haine Rd/B2050 Manston Rd – Queue Lengths (Vehicles)

Junction 4 – A256 Haine Rd/St John's Ave

3.2.29 The A256 Haine Road/St John's Avenue junction is a 3-arm priority arrangement. St John's Avenue provides access to the east of Haine Road through the Newington residential area to the A254 Margate Road.

3.2.30 There is a Traffic Regulation Order (TRO) prohibiting vehicles turning right from Haine Road south into St John's Avenue. In order to make this movement vehicles have to make a U-turn at the nearby Old Haine Road/New Haine Road roundabout further to the north of this junction and then turn left into St John's Avenue.

Observed Traffic Movements

3.2.31 The peak hour turning movements are shown in Figure 3-5.

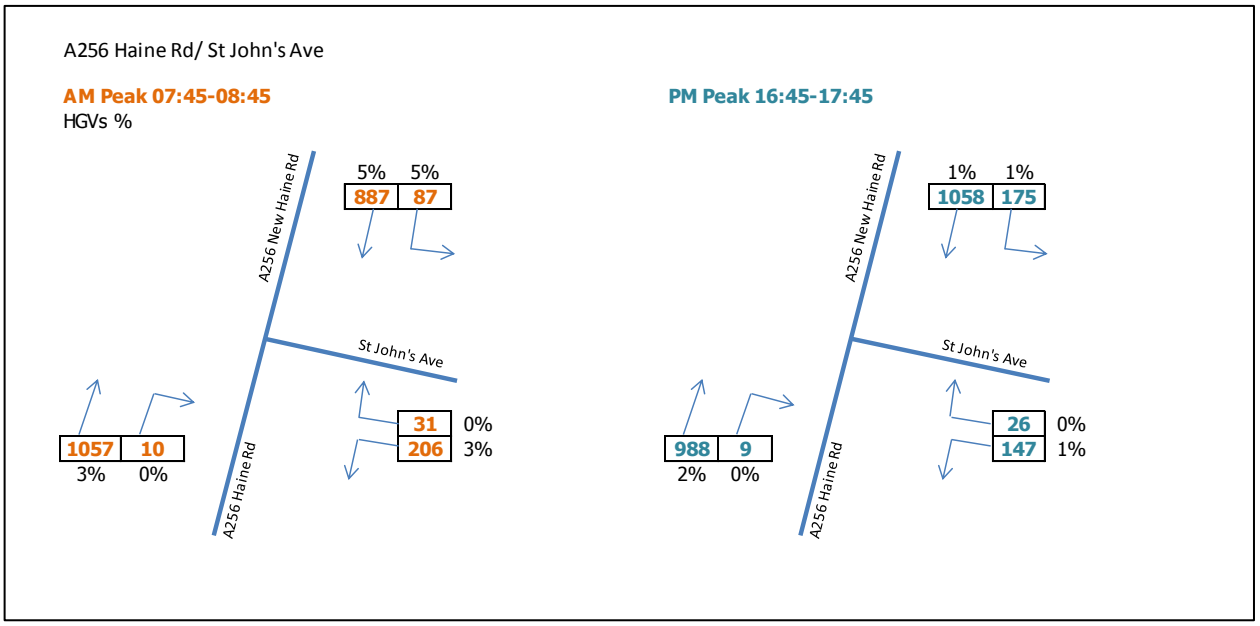

Figure 3-5: A256 Haine Rd/St John's Ave –Turning Movements (Vehicles)

3.2.32 The peak hour flows indicate a dominant flow on the A256 in both directions of circa 1000 vehicles. The St. John's Avenue arm is very much the minor arm with relatively low flows in and out in each peak.

3.2.33 Outbound movements from St John's Avenue are heavily biased to left out movements to the A256 Haine Rd (S) in both peaks, which may be due to the heavy straight ahead flow on the A256 resulting in few gaps for right turning traffic.

Junction 5 – A256 New Haine Rd/Haine Rd (South)

3.2.34 The A256 New Haine Road/Haine Road southern junction is the southern extent of New Haine Road which was built in 2008/09. From the roundabout Haine Road provides access from the south to Haine Village where the A256 was previously aligned.

Observed Traffic Movements

3.2.35 The peak hour turning movements are shown in Figure 3.6.

3.2.36 The dominant flow at this junction is on the A256 Haine Road/A256 New Haine Road. The Haine Road arm has relatively low flows in and out during each peak, particularly from the north. The high number of U-turning vehicles on the southern arm of this junction is likely due to the prohibition of right turning traffic at the previous junction.

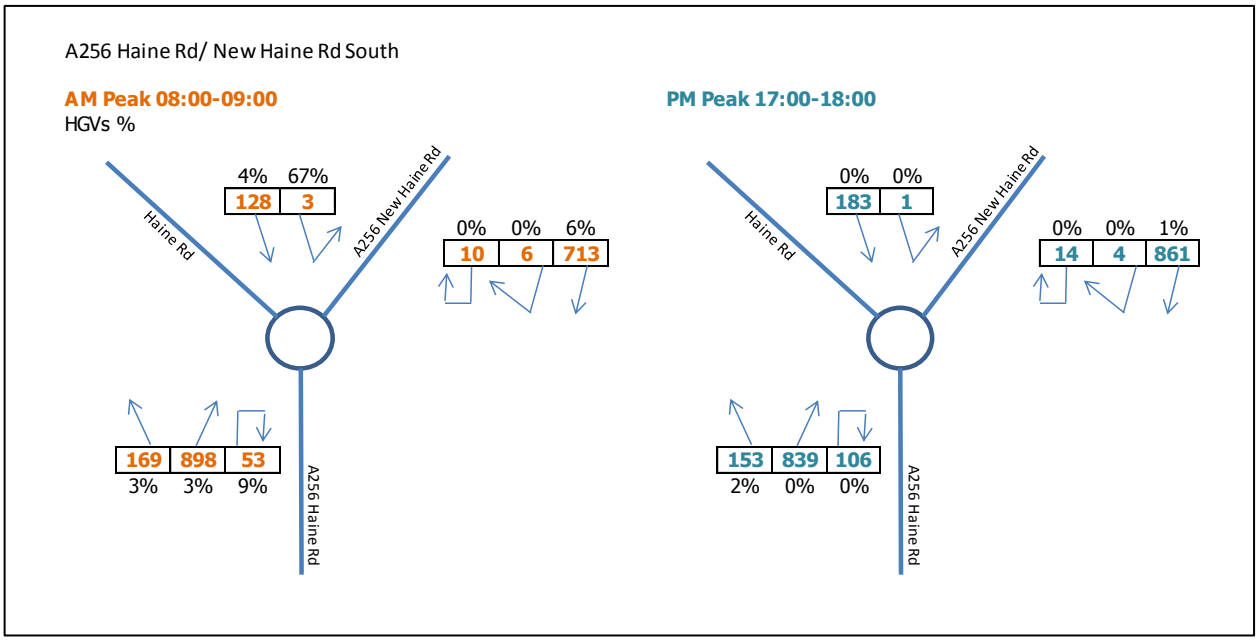

Figure 3-6: A256 New Haine Rd/Haine Rd (S) - Turning Movements (Vehs)

Observed Queue Lengths

3.2.37 Table 3-7 displays the queue length survey results for the A256 New Haine Road/ Haine Road roundabout junction.

3.2.38 The table shows there are very short queues at this junction in the AM peak hour. The significantly longer queues in Lane 1 of the A256 New Haine Road arm of this junction in the PM peak hour are in contrast to the queue lengths observed throughout the AM peak hour and are significantly higher than those observed at the start and end of the remaining PM peak survey period (between 16:00 and 19:00).

3.2.39 Throughout most of the PM peak hour queue lengths were longer than 30 vehicles and no specific incidents were recorded by the enumerators during the survey period. The data suggests some form of exit blocking occurs during the PM peak which causes the significant queueing on the southbound A256 approach to the junction.

	Haine Road	A256 New Haine Rd		A256 Haine Rd S	
Signal Change	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2
08:00-08:05	0	5	0	0	0
08:05-08:10	2	2	0	0	0
08:10-08:15	3	3	0	4	0
08:15-08:20	3	1	0	4	0
08:20-08:25	2	2	0	0	0
08:25-08:30	1	2	0	0	0
08:30-08:35	2	5	1	3	0
08:35-08:40	2	3	0	9	0
08:40-08:45	1	2	0	3	0
08:45-08:50	2	2	0	0	0
08:50-08:55	1	0	0	0	0
08:55-09:00	3	2	0	0	0
Total	**22**	**29**	**1**	**23**	**0**
17:00-17:05	8	37	1	3	2
17:05-17:10	14	35	1	6	1
17:10-17:15	16	36	1	3	1
17:15-17:20	14	38	1	3	1
17:20-17:25	7	37	1	1	1
17:25-17:30	3	22	1	1	0
17:30-17:35	5	28	1	0	0
17:35-17:40	2	42	1	1	0
17:40-17:45	3	37	1	1	1
17:45-17:50	4	38	1	0	0
17:50-17:55	2	42	1	0	0
17:55-18:00	5	35	1	1	0
Total	**83**	**427**	**12**	**20**	**7**

Table 3-7: A256 Haine Rd/New Haine Rd – Queue Lengths (Vehicles)

Junction 6 – A256 New Haine Rd/New Cross Rd

3.2.40 The A256 New Haine Road/New Cross Road junction is a 3-arm roundabout with New Cross Road providing a link to the A254 Margate Road to the north east.

Observed Traffic Movements

3.2.41 The peak hour turning movements are shown in Figure 3-7.

3.2.42 In the AM peak, over 250 vehicles turn into New Cross Road from A256 New Haine Road with a similar flow exiting New Cross Road. In the PM peak, nearly 450 vehicles turn into New Cross Road from A256 New Haine Road whilst 310 vehicles exit.

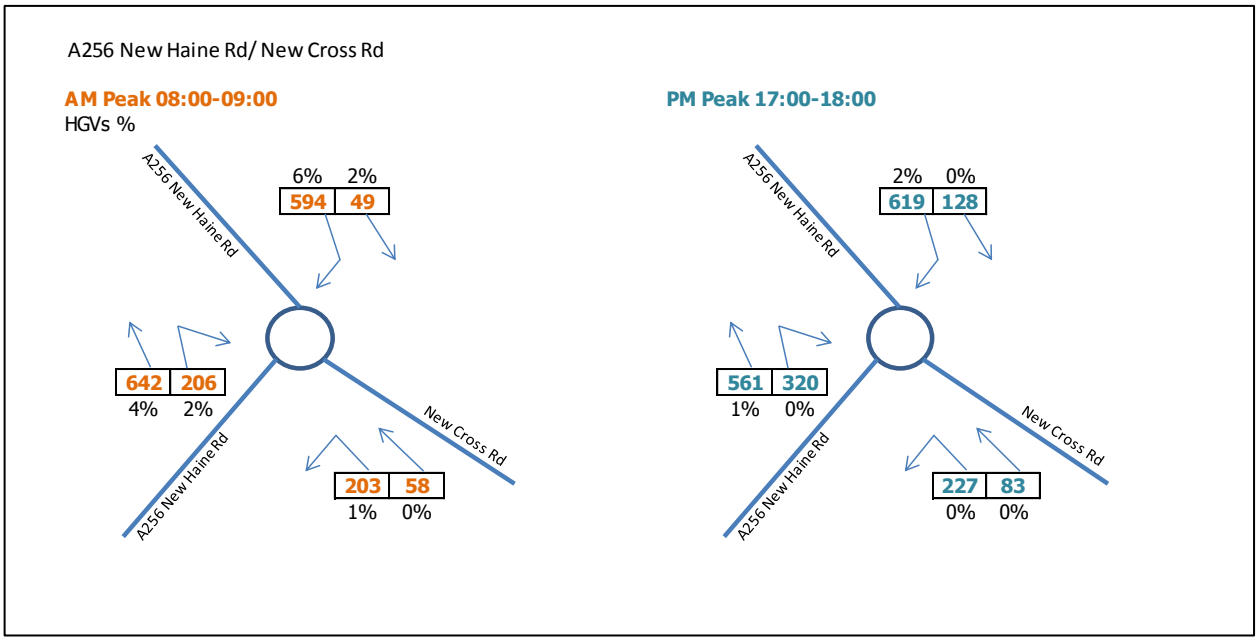

Figure 3-7: A256 Haine Rd/New Cross Rd – Turning Movements (Vehicles)

Observed Queue Lengths

3.2.43 Table 3-8 displays the queue length survey results for the A256 Haine Road/New Cross Road junction. As can be seen there are fairly consistent but short queues on the New Cross Road arm of this junction in both the AM and PM peak hours. The maximum queues observed were 7 vehicles in the AM peak. Very short queues were observed on both A256 Haine Road arms of this junction in the AM peak hour.

3.2.44 In the PM peak hour, queues of up to 20 vehicles were observed for over half of the peak hour. The remainder of the hour and the other arms of this junction experienced short queues during the PM peak hour.

	A256 New Haine Rd N	New Cross Rd	A256 New Haine Rd S
Signal Change	Lane 1	Lane 1	Lane 1
08:00-08:05	6	1	0
08:05-08:10	4	3	2
08:10-08:15	3	3	3
08:15-08:20	6	2	2
08:20-08:25	6	7	2
08:25-08:30	4	5	0
08:30-08:35	5	3	1
08:35-08:40	0	1	3
08:40-08:45	1	3	0
08:45-08:50	4	3	2
08:50-08:55	2	3	2
08:55-09:00	1	3	1
Total	**42**	**37**	**18**
17:00-17:05	8	3	4
17:05-17:10	17	6	1
17:10-17:15	20	4	4
17:15-17:20	19	5	4
17:20-17:25	20	3	3
17:25-17:30	15	2	5
17:30-17:35	18	6	3
17:35-17:40	20	3	0
17:40-17:45	5	4	2
17:45-17:50	5	1	1
17:50-17:55	5	2	1
17:55-18:00	3	1	2
Total	**155**	**40**	**30**

Table 3-8: A256 Haine Rd/New Cross Rd – Queue Lengths (Vehicles)

Junction 7 – A256 New Haine Rd/Old Haine Rd (North)

3.2.45 The A256 New Haine Road/Haine Road northern roundabout is the northern most point of the New Haine Road. From the roundabout, Haine Road provides access from the north to Haine Village. The A256 Haine Road continues north towards the Westwood roundabout.

Observed Traffic Movements

3.2.46 The peak hour turning movements are shown in Figure 3-8.

3.2.47 The dominant flow of traffic during both peaks is between the A256 Haine Road and the A256 New Haine Road. The minor Haine Rd arm observed 190 vehicles turning out in the AM peak compared with 166 in the PM peak. The lower flow on the northbound A256 Haine Road arm compared with the outgoing flows from the previous junction (A256 Haine Road/New Cross Road) are explained by the entrance to employment sites and the rear access into Westwood Cross retail/leisure complex.

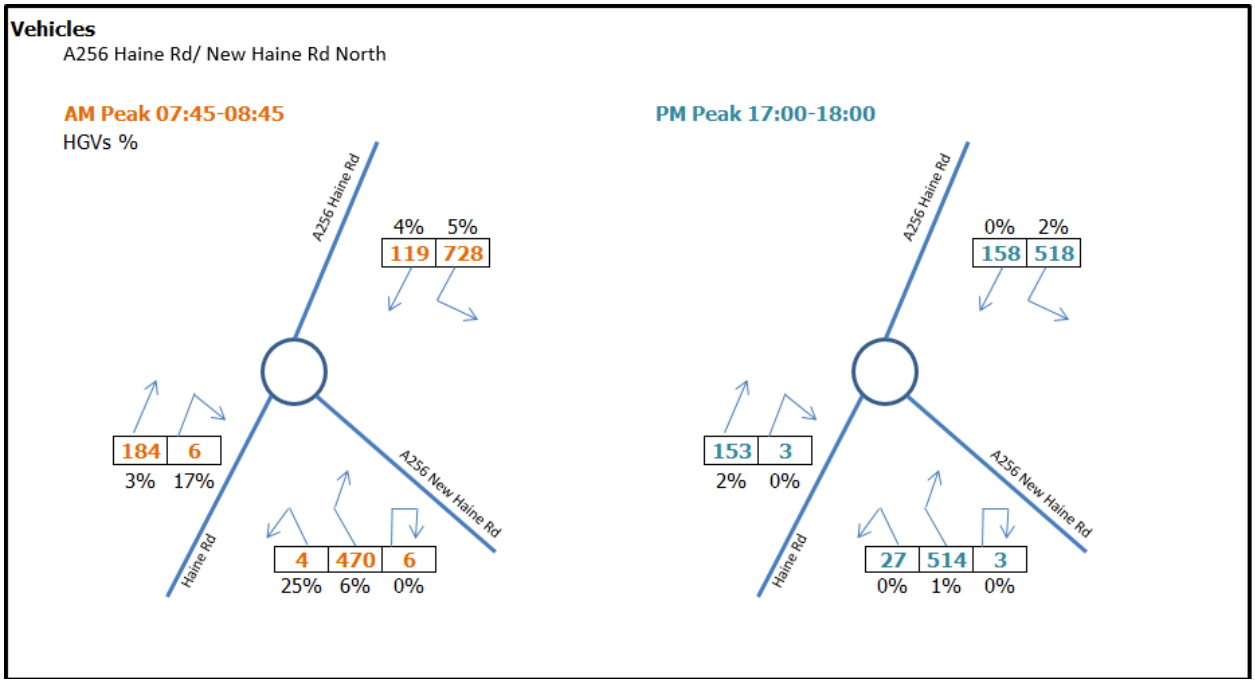

Figure 3-8: A256 New Haine Rd/Haine Rd (N) – Turning Movements (Vehs)

Observed Queue Lengths

3.2.48 Table 3-9 displays the queue length survey results for the A256 New Haine Road/Haine Road northern junction. The table highlights that there is very little queueing in both the AM and PM peak hours. A maximum queue of 11 vehicles formed on the A256 New Haine Road arm of this junction in the AM peak.

3.2.49 Queues were also longest on this arm in the PM peak hour, with a maximum of 19 vehicles observed. Queues of over 10 vehicles were observed consistently for 25 minutes of the peak hour.

	A256 Haine Road		A256 New Haine Rd		Haine Rd
Signal Change	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1
07:45-07:50	0	0	0	9	2
07:50-07:55	0	0	0	8	2
07:55-08:00	0	0	0	4	1
08:00-08:05	2	0	0	10	2
08:05-08:10	0	0	0	2	2
08:10-08:15	0	0	0	1	1
08:15-08:20	0	0	2	1	1
08:20-08:25	0	0	1	9	3
08:25-08:30	1	0	0	5	0
08:30-08:35	0	0	0	2	2
08:35-08:40	0	0	2	11	1
08:40-08:45	0	0	0	5	5
Total	**3**	**0**	**5**	**67**	**22**
17:00-17:05	0	2	1	13	2
17:05-17:10	0	0	2	19	1
17:10-17:15	0	0	6	16	4
17:15-17:20	0	0	3	10	2
17:20-17:25	0	0	8	11	3
17:25-17:30	0	0	0	6	5
17:30-17:35	0	0	1	6	2
17:35-17:40	1	0	1	5	2
17:40-17:45	0	0	0	6	0
17:45-17:50	0	0	1	8	3
17:50-17:55	0	0	0	5	2
17:55-18:00	0	0	0	0	3
Total	**1**	**2**	**23**	**105**	**29**

Table 3-9: A256 New Haine Rd/Haine Rd (N) – Queue Lengths (Vehicles)

Junction 8 – A256 Haine Rd/Star Lane Link/Westwood Cross

3.2.50 The A256 Haine Road/Star Lane Link/Westwood Cross junction is a 4 arm roundabout providing an access to the Westwood Cross shopping/leisure complex. The Star Lane Link provides an alternative route to the A254 Margate Road to avoid the Westwood roundabout. It crosses Nash Road to the north west and meets the A254 at the Poorhole Lane roundabout junction.

Observed Traffic Movements

3.2.51 The peak hour turning movements are shown in Figure 3-9.

3.2.52 In both the AM and PM peak hours there are a similar number of vehicles turning into and out of Star Lane Link from the A256 Haine Road south. There are 466 vehicles travelling from A256 Haine Road south to north in the AM peak and 409 vehicles in the PM peak. There are around 100 vehicles fewer travelling from the A256 Haine Road north to south in the PM peak, however there are around 100 vehicles more turning into Westwood Cross from this arm in the PM peak. There are also more vehicles exiting Westwood Cross in the PM peak.

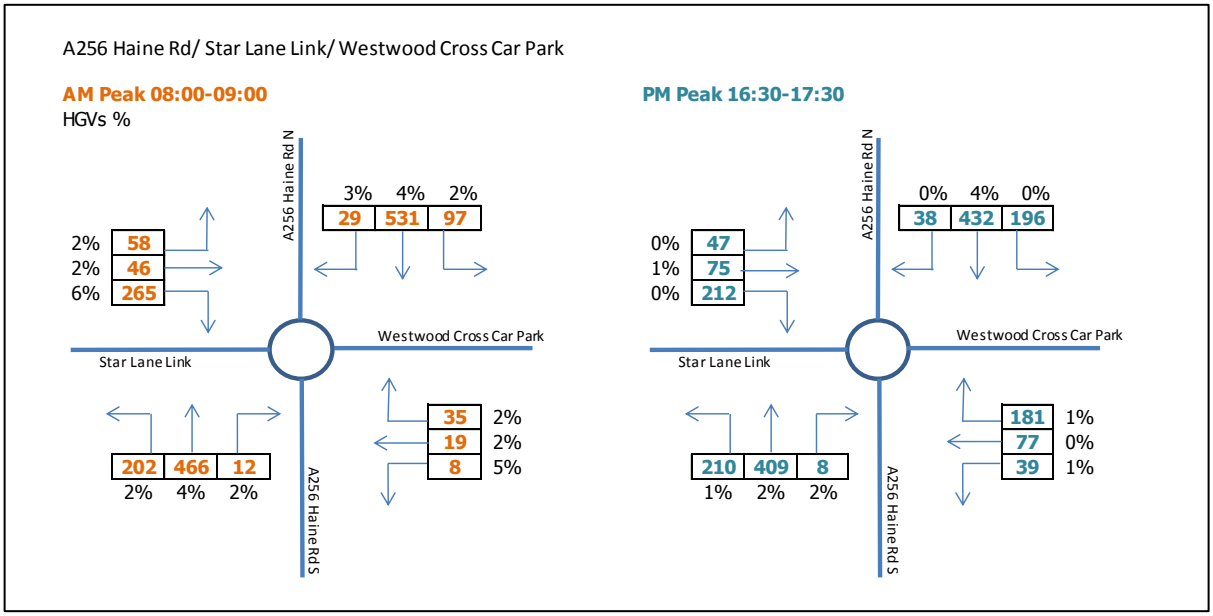

Figure 3-9: A256 Haine Rd/Star Lane Link/Westwood Cross – Turning Movements (Vehicles)

Observed Queue Lengths

3.2.53 Table 3-10 displays the queue length surveys for the A256 Haine Road/Westwood Cross access Star Lane link roundabout junction. In the AM peak no queues reach more than eight vehicles and this length queue is observed only in Lane 1 of the A256 Haine Road south in two five-minute intervals. In the PM peak, slightly longer queues are observed at this junction. The A256 Haine Road north queueing reaches a maximum of 11 vehicles and queueing throughout the rest of the peak hour is less than 7 vehicles.

	A256 Haine Road N		Westwood Cross		A256 Haine Rd S		Star Lane Link	
Signal Change	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:00-08:05	0	0	1	3	3	0	0	0
08:05-08:10	2	0	1	2	5	0	1	0
08:10-08:15	5	0	1	4	5	0	0	1
08:15-08:20	3	0	1	3	2	0	2	3
08:20-08:25	1	0	0	2	4	0	1	0
08:25-08:30	2	0	1	3	8	1	0	0
08:30-08:35	3	0	2	2	8	1	0	1
08:35-08:40	2	0	0	4	5	1	1	0
08:40-08:45	6	0	1	0	2	0	2	1
08:45-08:50	4	0	1	4	2	0	1	1
08:50-08:55	2	0	2	4	4	0	1	1
08:55-09:00	1	0	2	2	4	1	1	0
Total	**31**	**0**	**13**	**33**	**52**	**4**	**10**	**8**
16:30-16:35	4	0	1	6	5	0	2	1
16:35-16:40	11	1	1	5	4	0	1	1
16:40-16:45	7	1	2	8	8	1	1	4
16:45-16:50	11	0	1	3	3	1	1	3
16:50-16:55	4	1	2	1	3	1	2	2
16:55-17:00	7	1	2	4	8	0	1	3
17:00-17:05	6	1	1	3	6	0	1	3
17:05-17:10	5	0	2	7	7	1	2	4
17:10-17:15	7	1	2	2	8	1	1	4
17:15-17:20	5	0	1	5	8	2	1	3
17:20-17:25	4	2	2	2	6	1	1	3
17:25-17:30	3	0	1	2	6	0	1	2
Total	**74**	**8**	**18**	**48**	**72**	**8**	**15**	**33**

Table 3-10: A256 Haine Rd/Star Lane Link/Westwood Cross – Queue Lengths (Vehicles)

Junction 9 – A256 Haine Rd/A254 Margate Rd (Westwood roundabout)

3.2.54 The Westwood roundabout is a 4-arm junction where the A256 Haine Road meets the A254 Margate Road. The A256 continues east as Westwood Road to St Peters. The A254 Margate Road runs south east of this junction through Northwood towards Ramsgate and north of the junction to Margate.

Observed Traffic Movements

3.2.55 The peak hour turning movements are shown in Figure 3-10.

3.2.56 In both the AM and PM peak hours, the A256 Haine Road arm of this junction carries the largest number of vehicles by nearly 100 vehicles. In the AM peak there are around 250 vehicles travelling both north (on A254 Margate Road) and straight over (on A256 Westwood Road) from this arm. Just less than 200 vehicles turn right onto A54 Margate Road south. In the PM peak the dominant flow is straight over (to A254 Westwood Road) with 428 vehicles making this movement, whilst less than 200 vehicles are turning left (Margate Road north) and south (Margate Road south).

3.2.57 On the remaining three arms of this junction, and in both the AM and PM peak hours, the largest flows are the straight ahead movements. Even so, from the A254 Margate Road north and south, there is a large flow of around 200 vehicles, turning right and left respectively, into A256 Haine Road in both the AM and PM peak hours.

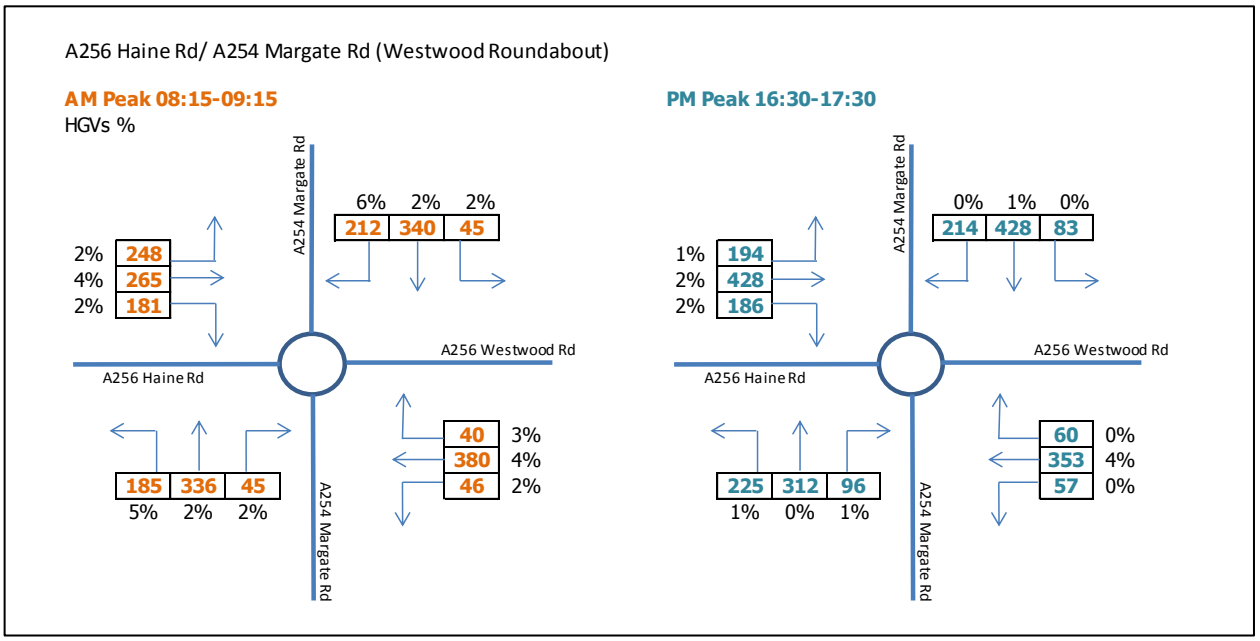

Figure 3-10: A256 Haine Rd/A254 Margate Rd (Westwood roundabout) – Turning Movements (Vehicles)

Observed Queue Lengths

3.2.58 Table 3-11 displays the queue length survey results for the A256 Haine Road/A254 Margate Road/Westwood Road (Westwood) roundabout. In the AM peak hour, the longest queues are observed on the A256 Westwood Road where queuing was observed to be over or nearing 20 vehicles for the majority of the hour. During one 5-minute interval the queue spiked to 40 vehicles.

3.2.59 Occasional queue lengths of over 10 vehicles were observed in Lanes 1 and 2 of the A254 Margate Road north arm of this junction.

3.2.60 In the PM peak hour, there was more consistent and prolonged queueing on both the A254 Margate Road north arm and the A256 Westwood Road arms of this junction. In Lane 1 of both of these arms, the queueing never falls below 14 vehicles and reaches a maximum of 42 vehicles on the A254 and 38 vehicles on the A256.

	A254 Margate Rd N		**A256 Westwood Rd**		**A256 Margate Rd S**		**A256 Haine Rd**	
Signal Change	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:15-08:20	4	3	19	0	3	6	1	1
08:20-08:25	18	11	40	1	3	6	5	2
08:25-08:30	15	9	25	0	1	7	3	5
08:30-08:35	9	3	21	2	2	3	3	2
08:35-08:40	8	1	24	3	1	4	4	1
08:40-08:45	3	3	9	1	1	3	3	3
08:45-08:50	7	3	7	0	2	8	5	2
08:50-08:55	8	10	24	1	5	6	5	3
08:55-09:00	7	6	13	1	2	5	2	1
09:00-09:05	9	2	17	1	2	6	5	2
09:05-09:10	6	6	20	2	1	6	4	3
09:10-09:15	7	2	19	4	4	4	2	2
Total	**101**	**59**	**238**	**16**	**27**	**64**	**42**	**27**
16:30-16:35	28	9	22	2	3	5	6	4
16:35-16:40	42	25	37	7	9	9	5	2
16:40-16:45	23	10	23	1	2	8	5	2
16:45-16:50	21	15	15	1	2	7	5	1
16:50-16:55	20	5	16	1	3	8	5	2
16:55-17:00	15	4	16	3	4	7	7	1
17:00-17:05	15	8	30	3	5	7	5	2
17:05-17:10	35	12	24	3	2	8	9	2
17:10-17:15	28	22	28	6	3	8	5	2
17:15-17:20	39	22	38	7	4	7	3	1
17:20-17:25	18	10	28	9	4	8	7	5
17:25-17:30	14	4	23	10	2	6	3	1
Total	**298**	**146**	**300**	**53**	**43**	**88**	**65**	**25**

Table 3-11: A256 Haine Rd/A254 Margate Rd (Westwood roundabout) – Queue Lengths (Vehicles)

Junction 10 – A254 Margate Rd/Star Lane/Poorhole Lane

3.2.61 The A254 Margate Road/Star Lane/Poorhole Lane junction is a newly built 4-arm roundabout and along with upgrades to Poorhole Lane itself was opened August 2015. This junction was built with them aim of relieving some of the congestion at the A254/ A256 Westwood roundabout junction to the south. Star Lane heads south west, crossing Nash Road to the west and meets the A256 Haine Road at the Westwood Cross roundabout. Poorhole Lane heads south east and meets the A256 Westwood Road at another newly constructed roundabout junction, east of the Westwood roundabout the retail park and supermarket roundabout junctions.

Observed Traffic Movements

3.2.62 The peak hour turning movements are shown in Figure 3-11.

3.2.63 Poorhole Lane and Star Lane remove around 150 vehicles each from the southbound A254 Margate Road flow during both the AM and PM peak hours. The flow on this arm of the junction is the largest of all arms in both peak hours and the removal of over 300 vehicles lowers the straight on turning traffic from 868 vehicles to 566 vehicles in the AM peak, and from 1005 vehicles to 674 vehicles in the PM peak.

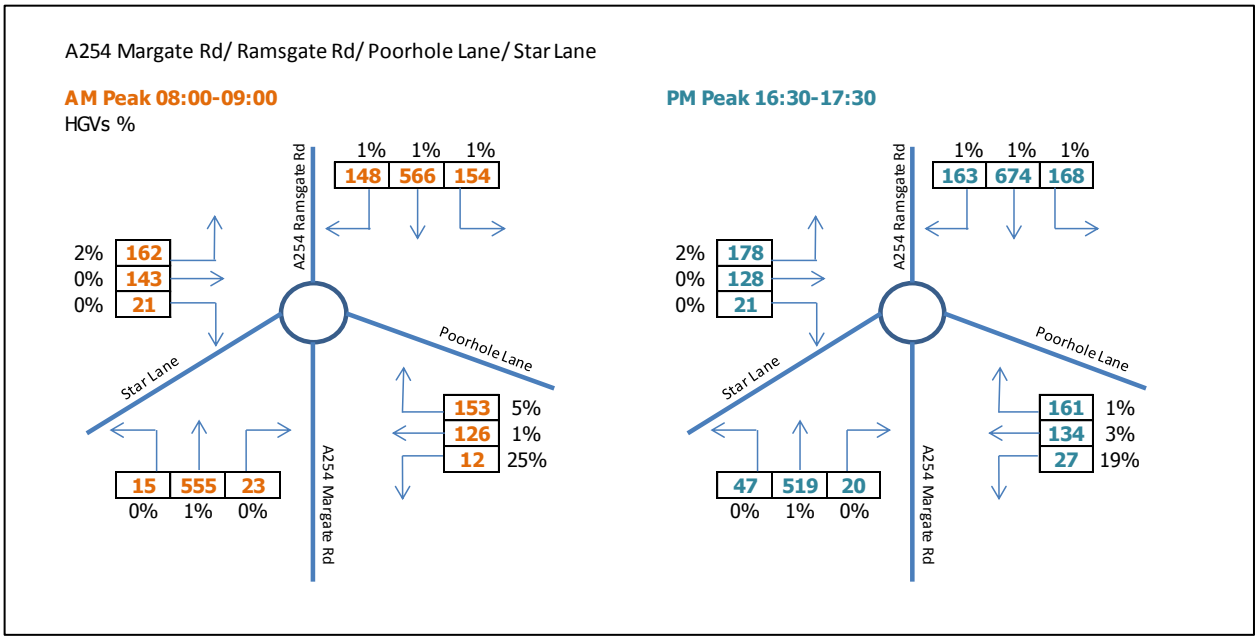

Figure 3-11: A254 Margate Rd/Star Lane/Poorhole Lane – Turning Movements (Vehicles)

3.2.64 A large proportion of the left turning traffic out of Poorhole Lane, heading towards the Westwood roundabout, is HGV traffic. This suggests they have come from the servicing yards on Poorhole Lane.

Observed Queue Lengths

3.2.65 Table 3-12 displays the queue length survey results for the A254 Margate Road/A254 Ramsgate Road/ Poorhole Lane roundabout junction. Overall queueing is low on all arms of this junction and is similar in both the AM and PM peak periods; however, there are more spikes in the queue lengths during the PM peak hour on the Poorhole Lane and A254 Margate Road arms of this junction. Recent highway improvements on Star Lane and Poorhole Lane have provided relief to the junction and reduced peak hour queuing and delay.

	A254 Ramsgate Rd		**Poorhole Lane**		**A254 Margate Rd**	**Star Lane**
Signal Change	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 1
08:00-08:05	2	3	5	6	4	4
08:05-08:10	0	6	7	11	11	5
08:10-08:15	1	6	10	4	9	4
08:15-08:20	2	3	2	2	5	4
08:20-08:25	5	4	2	3	4	5
08:25-08:30	1	6	6	5	3	7
08:30-08:35	1	5	5	2	2	4
08:35-08:40	1	4	5	8	4	4
08:40-08:45	0	2	4	5	6	7
08:45-08:50	1	1	8	6	8	5
08:50-08:55	4	2	1	2	5	8
08:55-09:00	1	6	5	4	11	8
Total	**19**	**48**	**60**	**58**	**72**	**65**
16:30-16:35	2	5	10	6	15	4
16:35-16:40	0	5	15	12	6	4
16:40-16:45	0	4	5	8	3	4
16:45-16:50	1	4	6	6	0	3
16:50-16:55	1	4	8	11	10	5
16:55-17:00	1	4	5	6	8	4
17:00-17:05	2	5	15	3	6	5
17:05-17:10	1	6	17	11	10	5
17:10-17:15	6	5	8	15	3	6
17:15-17:20	2	2	12	6	7	8
17:20-17:25	2	5	4	6	14	5
17:25-17:30	2	4	14	11	7	7
Total	**20**	**53**	**119**	**101**	**89**	**60**

Table 3-12: A254 Margate Rd/Star Lane/Poorhole Lane – Queue Lengths (Vehicles)

Junction 11 – A254 Ramsgate Rd/ B2052 College Rd (Victoria Traffic Lights)

3.2.66 The A254 Ramsgate Road from the Westwood area of Thanet meets the B2052 College Road at this 5-arm signalised junction. The B2052 head north east through Northdown to Kingsgate and south west for approximately 350m where it meets Shottendane Road which runs east and parallel to the A28 heading out of Thanet. A254 Ramsgate Road to the north of this junction heads into the centre of Margate town.

3.2.67 The B2052 Beatrice Road is one way inbound and the B2052 College Road west is one way outbound. There is a no right turn from B2052 College Road east to A254 Ramsgate Road north.

Observed Traffic Movements

3.2.68 The peak hour turning movements are shown in Figure 3-12.

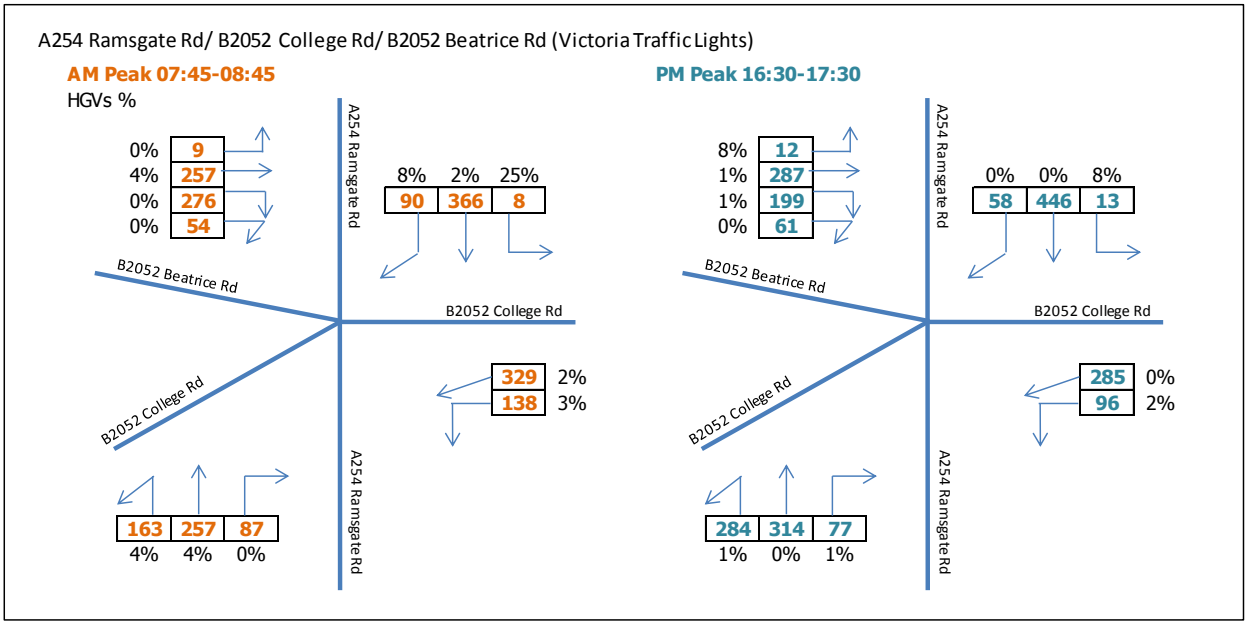

Figure 3-12: A254 Ramsgate Rd/B2052 College Rd (Victoria Traffic Lights) – Turning Movements (Vehicles)

3.2.69 In the AM peak, the total vehicular flows on each of the arms of this junction are fairly balanced at around 500 vehicles; however the B2052 Beatrice Road flows are slightly larger at nearly 600 vehicles. In the PM peak hour, the flows through the junction are of the same order as the AM peak; however, notably the northbound and southbound flows on the A254 Ramsgate Road are greater.

Observed Queue Lengths

3.2.70 Table 3-13 displays the AM peak hour queue length survey results for the Victoria traffic lights junction in Margate. The table highlights that there are fairly consistent queues of between 10 and 20 vehicles in at least one lane of each arm at this junction. The B2052 College Road experiences the longest sustained queues of over 15 vehicles for the majority of the AM peak hour.

3.2.71 Table 3-14 displays the PM peak hour queue length survey results for the junction. This junction experiences longer queues in the PM peak hour than in the AM peak hour. The queues experienced on the B2052 College Road are over 20 vehicles for longer intervals and near 30 vehicles at some points. Lane 1 of the A254 Ramsgate Road south also has longer queues in the PM peak with over 20 vehicles at a number of consecutive signal changes.

A254 Ramsgate Rd N			B2052 College Rd E		A254 Ramsgate Rd S			B2052 Beatrice Rd					
Signal Change	Lane 1	Lane 2		Lane 1		Lane 1	Lane 2		Lane 1		Lane 2		Lane 3 (Right Turn)
07:47:27	9	4	07:45:47	17	07:45:34	13	2	07:45:47	14	07:46:49	9	07:45-07:50	0
07:49:49	11	0	07:48:07	16	07:48:06	16	5	07:48:07	8	07:49:13	12	07:50-07:55	0
07:52:16	14	4	07:50:42	15	07:50:26	18	5	07:50:42	15	07:51:38	11	07:55-08:00	0
07:54:47	17	4	07:53:05	14	07:52:55	19	6	07:53:05	12	07:54:09	15	08:00-08:05	1
07:57:15	16	2	07:56:05	16	07:55:25	17	5	07:56:05	13	07:56:41	7	08:05-08:10	1
07:59:12	16	1	07:57:49	14	07:56:08	0	4	07:57:49	6	07:58:33	8	08:10-08:15	0
08:01:44	8	2	08:00:31	20	07:57:53	5	1	08:00:31	8	08:01:03	8	08:15-08:20	0
08:03:50	13	5	08:02:31	19	07:59:49	18	2	08:02:31	3	08:03:14	4	08:20-08:25	0
08:06:10	8	4	08:04:44	19	08:02:23	12	4	08:04:44	6	08:05:32	8	08:25-08:30	0
08:08:41	10	5	08:07:15	18	08:04:28	12	2	08:07:15	6	08:08:11	10	08:30-08:35	0
08:10:44	10	5	08:09:27	20	08:06:49	13	2	08:09:27	1	08:10:08	9	08:35-08:40	0
08:13:28	19	1	08:11:43	24	08:09:18	13	0	08:11:43	6	08:12:47	15	08:40-08:45	0
08:15:55	23	1	08:14:26	25	08:11:22	17	0	08:14:26	3	08:15:25	19		
08:18:55	12	2	08:17:11	18	08:14:05	19	2	08:17:11	17	08:18:20	14		
08:21:08	14	2	08:19:42	20	08:16:33	18	5	08:19:42	14	08:20:27	16		
08:24:21	20	2	08:22:39	22	08:17:33	4	3	08:22:39	21	08:23:40	18		
08:27:02	8	5	08:25:51	20	08:19:33	17	1	08:25:51	11	08:26:28	14		
08:29:53	15	3	08:28:22	19	08:21:46	16	3	08:28:22	18	08:29:15	16		
08:32:04	13	4	08:30:43	18	08:24:58	19	1	08:30:43	7	08:31:24	22		
08:34:03	10	5	08:32:49	16	08:27:39	20	3	08:32:49	14	08:33:29	11		
08:36:49	9	1	08:35:31	20	08:30:30	12	2	08:35:31	5	08:36:11	17		
08:39:25	21	3	08:37:42	19	08:32:42	19	2	08:37:42	9	08:38:43	17		
08:42:10	14	3	08:40:55	22	08:34:40	14	5	08:40:55	22	08:41:35	16		
08:44:08	10	4	08:42:57	20	08:37:28	15	0	08:42:57	20	08:43:33	11		
			08:44:45	22	08:40:02	20	1	08:44:45	5				
					08:42:46	9	4						
					08:44:46	18	2						

Table 3-13: A254 Ramsgate Rd/B2052 College Rd (Victoria Traffic Lights) - AM Peak Queue Lengths (Vehicles)

A254 Ramsgate Rd N			B2052 College Rd E		A254 Ramsgate Rd S			B2052 Beatrice Rd					
Signal Change	Lane 1	Lane 2		Lane 1		Lane 1	Lane 2		Lane 1		Lane 2		Lane 3 (Right Turn)
16:32:09	20	3	16:30:31	25	16:30:25	18	2	16:30:31	2	16:31:38	7	16:30-16:35	0
16:34:47	11	3	16:33:39	22	16:32:46	21	1	16:33:39	8	16:34:06	11	16:35-16:40	0
16:36:41	5	2	16:35:44	25	16:35:25	15	1	16:35:44	23	16:38:29	10	16:40-16:45	1
16:39:00	17	0	16:37:33	24	16:37:19	15	4	16:37:33	14	16:40:35	7	16:45-16:50	0
16:41:06	16	3	16:39:41	23	16:39:39	18	3	16:39:41	5	16:43:15	9	16:50-16:55	0
16:43:52	10	2	16:42:16	17	16:41:43	17	3	16:42:16	8	16:45:46	4	16:55-17:00	0
16:46:27	14	1	16:45:12	18	16:44:31	19	5	16:45:12	12	16:47:53	4	17:00-17:05	0
16:48:26	12	4	16:47:33	18	16:47:05	18	2	16:47:33	8	16:50:03	8	17:05-17:10	0
16:50:41	11	5	16:49:25	20	16:49:02	22	0	16:49:25	9	16:52:47	4	17:10-17:15	0
16:53:19	16	5	16:52:10	25	16:51:18	20	3	16:52:10	16	16:55:31	9	17:15-17:20	0
16:56:10	19	6	16:54:44	23	16:53:55	14	0	16:54:44	10	16:57:48	10	17:20-17:25	0
16:58:24	17	5	16:57:12	27	16:56:46	21	3	16:57:12	6	17:00:35	8	17:25-17:30	0
17:0105	16	6	16:59:48	28	16:59:02	20	2	16:59:48	11	17:03:28	9		
17:04:02	14	5	17:02:24	22	17:01:46	22	6	17:02:24	12	17:06:05	18		
17:06:36	20	4	17:05:01	19	17:04:38	19	1	17:05:01	4	17:08:56	17		
17:09:28	21	2	17:07:52	18	17:07:14	21	2	17:07:52	9	17:11:10	7		
17:11:43	18	1	17:10:36	26	17:10:06	22	8	17:10:36	19	17:13:36	22		
17:14:14	17	2	17:12:58	24	17:12:21	19	6	17:12:58	11	17:16:18	19		
17:16:52	12	2	17:15:34	22	17:14:52	20	1	17:15:34	17	17:18:05	13		
17:18:42	13	5	17:17:33	24	17:17:31	13	1	17:17:33	8	17:20:21	5		
17:20:51	4	4	17:19:41	21	17:19:20	19	1	17:19:41	12	17:23:06	21		
17:23:36	7	4	17:22:01	23	17:21:30	21	1	17:22:01	6	17:25:44	6		
17:26:17	10	1	17:24:40	27	17:24:15	22	1	17:24:40	21	17:27:36	8		
17:28:12	5	1	17:27:13	17	17:26:54	20	3	17:27:13	9				
			17:29:41	16	17:28:51	18	3	17:29:41	13				

Table 3-14: A254 Ramsgate Rd/B2052 College Rd (Victoria Traffic Lights) - PM Peak Queue Lengths (Vehicles)

Junction 12 – A254 Ramsgate Rd / Enterprise Rd

3.2.72 Enterprise Road to the north of the route is the sole access to the Westwood industrial estate which contains a mix of commercial and industrial units with parking provided. The junction is a signalised T-junction with a right turn lane for traffic from the north.

Observed Traffic Movements

3.2.73 The peak hour turning movements are shown in Figure 3-13.

3.2.74 In the AM peak period approximately 18% of traffic on the A254 Ramsgate Road was shown to turn into the industrial estate. There are seen to be approximately twice the number of vehicles turning into Enterprise Road from the south as from the north.

3.2.75 In the PM peak period approximately 10% of the traffic on the A254 Ramsgate Road was seen to turn into the industrial estate.

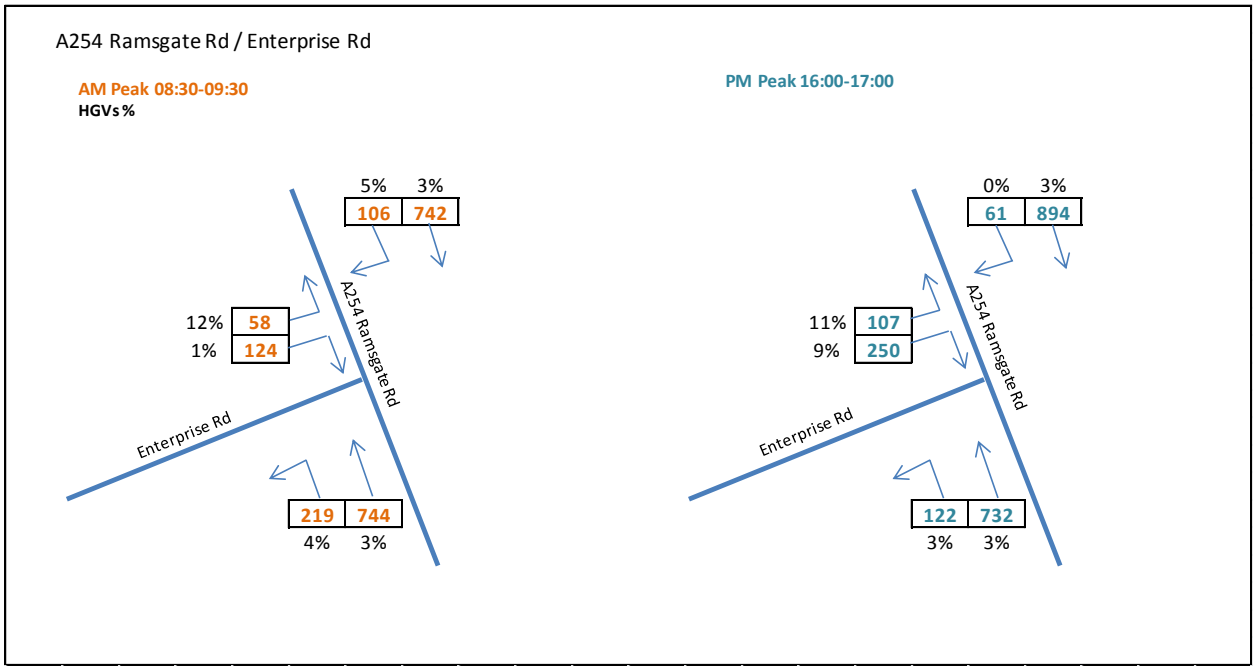

Figure 3-13: A254 Ramsgate Rd /Enterprise Rd – Turning Movements (Vehicles)

3.2.76 Table 3-15 shows the queuing traffic during the AM peak period. Traffic from the north shows occasional queues of traffic including a short period of time when queuing traffic reaches 20+ vehicles and remains beyond the signal change. Traffic turning into the industrial estate is provisioned with a queueing capacity of 87 metres (approximately 15 car lengths) and is therefore unlikely to be a component part of the queues.

3.2.77 In the AM peak traffic from the south builds into queues which in the main appear to clear on change of signal.

3.2.78 Enterprise Road has no significant queues within the AM peak period.

A - A254 Ramsgate Rd N			B - A254 Ramsgate Rd S		C - Enterprise Road		
Signal Change	**Lane 1**	**Lane 2**		**Lane 1**		**Lane 1**	**Lane 2**
8:30:37	1	0	8:30:02	7	8:30:00	1	2
8:31:41	15	0	8:31:06	11	8:31:05	2	1
8:33:08	2	0	8:32:10	1	8:32:30	0	1
8:34:10	7	1	8:33:37	8	8:33:35	3	1
8:35:37	6	0	8:34:39	6	8:35:01	0	2
8:36:55	4	0	8:36:06	11	8:36:19	1	1
8:37:58	8	0	8:37:27	14	8:37:24	1	2
8:39:02	12	0	8:38:27	3	8:38:27	8	0
8:40:05	0	0	8:39:31	15	8:39:30	1	1
8:41:09	1	0	8:40:34	10	8:40:33	1	2
8:42:25	3	2	8:41:38	2	8:41:47	2	1
8:43:28	2	0	8:42:54	5	8:42:51	4	3
8:44:51	1	1	8:43:57	8	8:44:14	0	2
8:46:11	4	0	8:45:20	8	8:45:34	1	2
8:47:14	1	1	8:46:40	7	8:46:37	2	1
8:48:18	7	0	8:47:43	6	8:49:17	0	3
8:49:55	14	1	8:48:47	6	8:50:23	1	0
8:50:59	13	1	8:50:24	7	8:51:27	3	0
8:52:02	21	0	8:51:28	4	8:52:39	1	1
8:53:17	20	0	8:52:31	10	8:54:00	0	1
8:54:36	18	2	8:53:46	11	8:55:04	5	0
8:55:40	9	5	8:55:05	8	8:56:06	2	5
8:56:44	7	2	8:56:09	8	8:57:11	2	1
8:57:46	10	2	8:57:13	12	8:58:13	1	3
8:58:49	4	0	8:58:15	9	8:59:36	1	1
9:00:12	5	1	8:59:18	13	9:00:58	0	1
9:01:34	2	2	9:00:41	9	9:02:19	0	1
9:02:57	1	1	9:02:03	6	9:03:24	1	3
9:04:00	1	6	9:03:26	8	9:04:27	0	1
9:05:03	5	6	9:04:29	11	9:05:43	2	1
9:06:19	6	5	9:05:32	4	9:06:46	0	1
9:07:22	10	2	9:06:48	7	9:07:49	0	3
9:08:26	3	0	9:07:51	5	9:08:59	3	2
9:09:35	0	1	9:08:55	6	9:10:11	2	1

A - A254 Ramsgate Rd N			B - A254 Ramsgate Rd S		C - Enterprise Road		
9:10:47	19	2	9:10:04	6	9:11:20	1	1
9:11:55	20	0	9:11:16	2	9:12:44	0	4
9:13:20	2	0	9:12:24	4	9:14:52	1	0
9:14:23	10	1	9:13:49	8	9:15:57	1	0
9:15:27	0	0	9:14:52	8	9:17:39	2	2
9:16:33	4	6	9:15:56	6	9:18:42	1	2
9:18:15	5	0	9:17:02	5	9:19:47	1	0
9:19:18	5	2	9:18:44	10	9:20:48	2	4
9:20:21	3	3	9:19:47	14	9:21:51	0	2
9:21:25	7	3	9:20:50	12	9:22:57	1	4
9:22:28	1	0	9:21:54	6	9:23:58	2	2
9:23:32	9	4	9:22:57	11	9:25:01	2	2
9:24:34	4	5	9:24:01	4	9:26:40	0	1
9:25:37	0	2	9:25:03	13	9:27:57	1	5
9:27:18	7	0	9:26:06	13	9:29:00	0	1
9:28:35	5	0	9:27:47	8			
9:29:38	6	0	9:29:04	6			

Table 3-15: A254 Ramsgate Rd /Enterprise Rd - AM Peak Queue Lengths (Vehicles)

3.2.79 Table 3-16 shows the PM peak traffic queues. Traffic is shown to queue consistently through the PM peak on the A254 from the north, these queues are seen to frequently extend to 20+ vehicles and are sustained beyond the signal change. Traffic from the south also shows consistent queueing these queues appear to ebb and flow with the light sequence. Traffic turning into Enterprise Road from the north does not appear to queue once access has been gained to the dedicated right turn lane.

3.2.80 There was seen to be a period of just over 5 minutes when queues built up on Enterprise Road extending to a maximum of 37. No issues or anomalies were reported by the survey collection team.

A - A254 Ramsgate Rd N			B - A254 Ramsgate Rd S		C - Enterprise Road		
Signal Change	Lane 1	Lane 2		Lane 1		Lane 1	Lane 2
16:01:13	19	0	16:01:42	10	16:00:20	1	0
16:02:55	10	2	16:03:24	5	16:02:03	3	6
16:04:37	18	0	16:05:06	6	16:03:47	3	19
16:06:21	11	0	16:06:50	7	16:05:29	4	23
16:08:04	19	2	16:08:33	13	16:07:12	2	37
16:09:47	20	1	16:10:16	12	16:08:57	0	19

16:11:30	20	1	16:11:59	15	16:10:40	4	3
16:13:14	8	0	16:13:43	13	16:12:23	3	3
16:15:02	9	0	16:15:31	15	16:14:11	1	7
16:17:06	7	2	16:17:35	5	16:16:15	1	3
16:19:53	6	1	16:20:22	11	16:19:01	0	12
16:21:37	12	1	16:22:06	18	16:20:44	0	4
16:23:39	16	0	16:24:08	6	16:22:46	2	4
16:25:25	25	2	16:25:54	13	16:24:30	2	0
16:27:15	18	0	16:27:44	18	16:26:25	1	5
16:28:59	27	0	16:29:28	18	16:28:07	4	0
16:30:44	16	0	16:31:13	18	16:29:52	1	6
16:32:25	23	1	16:32:54	11	16:31:36	0	13
16:34:10	18	1	16:34:39	14	16:33:16	6	5
16:35:51	20	0	16:36:20	10	16:35:00	5	7
16:37:42	20	0	16:38:11	12	16:36:51	0	6
16:39:33	18	1	16:40:02	13	16:38:41	1	3
16:41:16	19	0	16:41:45	8	16:40:25	0	2
16:43:00	18	2	16:43:29	15	16:42:08	2	4
16:44:43	17	0	16:45:12	12	16:43:52	1	1
16:46:40	22	0	16:47:09	16	16:45:47	2	7
16:48:36	13	2	16:49:05	10	16:47:44	1	5
16:50:21	21	3	16:50:50	5	16:49:29	3	3
16:52:15	19	0	16:52:44	9	16:51:24	3	4
16:53:58	20	2	16:54:27	15	16:53:08	3	5
16:55:41	17	0	16:56:10	22	16:54:49	4	4
16:57:26	23	3	16:57:55	29	16:56:35	1	2
16:59:10	11	1	16:59:39	24	16:58:16	4	3

Table 3-16: A254 Ramsgate Rd /Enterprise Rd - PM Peak Queue Lengths (Vehicles)

Junction 13 – A254 Ramsgate Rd / QEQM Hospital

3.2.81 The QEQM hospital has two entrances one of which is on the A255 the other on the A254 to the northern end of the route. The QEQM junction with the A254 is a signalised T-junction with a left turn lane for traffic from the north and a right turn lane for traffic from the south.

Observed Traffic Movements

3.2.82 The peak hour turning movements are shown in Figure 3-14. Buses serving the hospital pick up and set down within the hospital site which is reflected in the relatively high HGV percentages shown turning into and out of the site.

3.2.83 In the AM peak period approximately 15% of traffic on the A254 Ramsgate Road was

recorded as turning into the hospital at this junction compared with approximately 8% in the PM peak period.

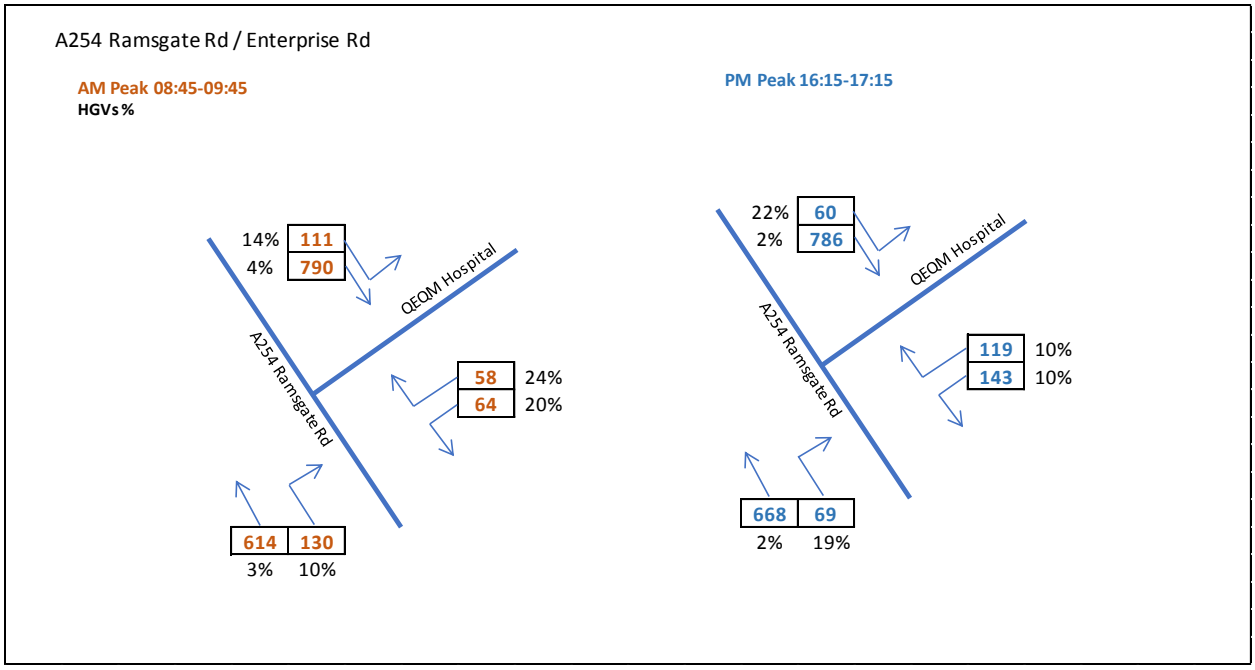

Figure 3-14: A254 Ramsgate Rd /Enterprise Rd – Turning Movements (Vehicles)

3.2.84 Table 3-17 shows the AM peak hour queues at the QEQM Hospital junction. As can be seen some queue development occurs in lane 2 on the A254 from the north, this is the straight ahead movement. Queues appear to ebb and flow and do not appear to continue beyond the signal change.

A - A254 Ramsgate Rd N				**B - Queen Elizabeth Queen Mother**			**C - A254 Ramsgate Rd S**			
Signal Change	Lane 1		Lane 2		Lane 1	Lane 2		Lane 1		Lane 2
8:46:04	0	8:46:25	20	8:45:49	3	0	8:45:46	5	8:46:58	3
8:47:49	0	8:48:04	21	8:47:25	1	4	8:47:25	2	8:48:31	2
8:49:30	0	8:49:40	13	8:49:00	1	1	8:49:01	5	8:50:57	7
8:52:00	0	8:50:30	9	8:49:52	2	0	8:49:51	4	8:52:40	7
8:53:42	1	8:52:12	19	8:51:33	1	2	8:51:33	8	8:54:20	7
8:55:26	1	8:53:52	7	8:53:15	2	0	8:53:13	4	8:56:16	6
8:57:22	1	8:55:49	20	8:55:12	4	0	8:55:10	13	8:58:11	7
8:59:14	1	8:57:43	5	8:57:06	2	2	8:57:04	5	8:59:50	3
9:00:46	1	8:59:23	9	8:58:47	1	1	8:58:44	2	9:01:13	1
9:02:05	0	9:00:46	6	9:01:39	5	0	9:00:07	0	9:02:46	5
9:03:46	0	9:02:19	2	9:03:22	5	0	9:01:40	2	9:04:30	3
9:05:48	1	9:04:03	20	9:05:22	2	1	9:03:24	10	9:06:25	6

A - A254 Ramsgate Rd N				B - Queen Elizabeth Queen Mother			C - A254 Ramsgate Rd S			
9:07:24	0	9:05:58	7	9:06:57	1	0	9:05:19	3	9:08:01	5
9:09:01	0	9:07:34	3	9:08:34	5	0	9:06:55	9	9:09:52	2
9:10:49	1	9:09:20	4	9:10:21	2	1	9:08:41	4	9:11:26	5
9:12:28	1	9:10:59	6	9:12:01	2	1	9:10:20	1	9:13:28	4
9:14:28	0	9:13:02	7	9:14:13	1	1	9:12:23	5	9:15:16	6
9:16:16	0	9:14:49	14	9:15:47	0	4	9:14:10	3	9:16:55	8
9:18:05	0	9:16:29	8	9:17:38	3	1	9:15:50	3	9:18:43	2
9:19:47	3	9:18:16	6	9:19:16	0	1	9:17:37	1	9:20:29	4
9:21:33	0	9:19:59	10	9:21:16	3	2	9:19:20	2	9:22:22	2
9:23:20	0	9:21:55	19	9:22:54	1	0	9:21:16	9	9:23:59	4
9:24:57	2	9:23:30	7	9:24:30	5	0	9:22:51	5	9:25:42	3
9:26:40	1	9:25:17	20	9:26:12	3	1	9:24:38	5	9:27:16	1
9:28:09	1	9:26:49	7	9:27:40	5	0	9:26:10	7	9:28:55	3
9:29:58	3	9:28:27	2	9:29:42	2	4	9:27:48	7	9:30:48	2
9:31:46	1	9:30:22	8	9:31:16	4	3	9:29:43	6	9:32:28	4
9:33:26	0	9:32:01	16	9:33:00	3	2	9:31:22	2	9:34:05	1
9:35:08	0	9:33:38	9	9:34:51	1	1	9:32:59	2	9:35:58	2
9:36:54	0	9:35:29	21	9:36:37	0	3	9:34:50	14	9:37:43	2
9:38:41	2	9:37:16	5	9:38:12	1	1	9:36:37	6	9:39:17	4
9:40:16	0	9:38:51	7	9:39:48	2	1	9:38:12	1	9:41:01	1
9:41:58	0	9:40:34	21	9:41:31	2	4	9:39:55	3	9:44:01	2
		9:42:11	3	9:43:05	0	2	9:41:32	6		
		9:43:44	7	9:44:36	3	1	9:43:05	3		
							9:44:45	0		

Table 3-17: A254 Ramsgate Rd /QEQM Hospital - AM Peak Queue Lengths (Vehicles)

3.2.85 Table 3-18 shows the PM peak hour queues at the QEQM Hospital junction. As can be seen in the PM peak there is some development of queues for southbound traffic but mostly these do not extend beyond the signal change. Queues for northbound traffic often exceed 19 vehicle with queues of 30 plus vehicles being common place. Queues of this length will persist beyond the signal change. There are also gaps within the peak hour period when queues are minimal and likely to dissipate following the signal change.

A - A254 Ramsgate Rd N				B - Queen Elizabeth Queen Mother			C - A254 Ramsgate Rd S			
Signal Change	Lane 1		Lane 2		Lane 1	Lane 2		Lane 1		Lane 2
16:17:07	0	16:15:45	7	16:15:00	1	5	16:15:06	36	16:16:10	2
16:18:47	0	16:17:25	16	16:16:39	6	0	16:16:46	36	16:17:52	2
16:20:32	0	16:19:05	8	16:18:18	5	1	16:18:26	38	16:19:33	3
16:22:24	0	16:21:03	20	16:20:17	4	4	16:20:24	36	16:21:29	1
16:24:05	0	16:22:42	21	16:21:54	5	0	16:22:03	38	16:23:09	2
16:25:49	0	16:24:24	17	16:23:38	3	4	16:23:45	38	16:24:51	2
16:27:42	0	16:26:19	21	16:25:32	6	0	16:25:40	37	16:26:46	2
16:29:29	0	16:28:01	14	16:27:15	7	1	16:27:22	20	16:28:28	1
16:31:24	1	16:30:00	7	16:29:14	6	1	16:29:21	23	16:30:27	4
16:32:59	0	16:31:34	5	16:30:59	2	2	16:30:55	8	16:32:01	5
16:34:43	1	16:33:16	19	16:32:32	6	2	16:32:37	7	16:33:44	4
16:36:23	0	16:35:00	19	16:34:15	3	4	16:34:21	17	16:35:28	4
16:38:11	1	16:36:41	17	16:35:57	6	2	16:36:02	14	16:37:09	10
16:39:48	1	16:38:25	4	16:37:44	1	1	16:37:46	16	16:38:51	3
16:42:51	0	16:40:06	21	16:39:19	7	3	16:39:27	18	16:41:50	2
16:44:44	0	16:41:22	1	16:40:35	6	3	16:40:43	14	16:43:49	1
16:47:55	1	16:43:22	20	16:42:33	5	0	16:42:43	37	16:46:57	3
16:49:31	0	16:45:01	18	16:44:14	6	3	16:44:22	22	16:48:39	0
16:51:13	0	16:46:30	8	16:45:46	5	1	16:45:51	28	16:50:20	1
16:54:15	0	16:48:12	11	16:47:25	5	2	16:47:33	35	16:53:19	3
16:55:48	0	16:49:45	4	16:49:04	4	2	16:49:06	39	16:54:51	4
16:57:18	0	16:51:31	4	16:50:44	7	1	16:50:52	38	16:56:26	0
16:59:00	0	16:52:52	3	16:52:14	0	1	16:52:13	37	16:58:03	3
17:00:49	0	16:54:24	3	16:53:47	2	2	16:53:45	9	16:59:46	3
17:02:41	0	16:55:58	6	16:55:20	6	2	16:55:19	9	17:01:45	1
17:04:38	1	16:57:37	6	16:56:52	6	0	16:56:58	10	17:03:37	2
17:06:20	0	16:59:19	21	16:58:36	7	0	16:58:40	8	17:05:25	2
17:08:02	0	17:01:18	9	17:00:30	4	2	17:00:39	35	17:07:08	3
17:09:41	0	17:03:11	19	17:02:25	5	1	17:02:32	26	17:08:49	0
17:14:21	0	17:04:56	14	17:04:09	5	0	17:04:17	28	17:13:26	2
		17:06:39	9	17:05:52	4	3	17:06:00	8		
		17:08:22	6	17:07:35	6	2	17:07:43	36		
		17:10:00	8	17:09:13	5	4	17:09:21	38		
		17:11:29	8	17:10:45	5	5	17:10:50	37		
		17:12:59	1	17:12:11	1	5	17:12:20	20		
		17:14:40	15	17:13:54	6	2	17:14:01	37		

Table 3-18: A254 Ramsgate Rd /QEQM Hospital - PM Peak Queue Lengths (Vehicles)

3.3 Link Capacity

3.3.1 An indication of the current conditions in terms of link capacity at certain points within the study corridor can be identified using the Design Manual for Roads and Bridges (DMRB) and existing one-way traffic flows.

3.3.2 The roads through the A256/A254 corridor can be categorised using the DMRB volume 5 TA 79/99. This classification and the road width then determine a theoretical capacity to compare against flows. An extract of the relevant section of the DMRB providing a description of the different road classifications is shown in Figure 3-15. These guidelines are seen as a relevant indicative tool for assessing capacity.

	UM	UAP1	UAP2	UAP3	UAP4
General Description	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
Speed Limit	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph

Figure 3-15: **DMRB TA 79/99 road classifications**

3.3.3 Three locations within the corridor have been identified as follows:

1. A254 between Victoria Lights and Salmestone Rd junctions;
2. A254 to the north of the junction with Star Lane and Poorhole Lane; and
3. A256 between the Haine Rd and St Johns Avenue junctions.

Figure 3-16: A256/A254 Link Capacity - Site 1 (©2017 Google)

3.3.4 Site 1 is considered to fall within the UAP4 category with a road width of 6.75 metres. The section of the route has the function of a high street with a 30mph speed limit, shop frontages and busy interactions with side roads. The characteristics of this section of the corridor are shown in Figure 3-16.

3.3.5 Sites 2 and 3 are considered to fall within the UAP3 category with road width of 6.75 metres. Both sites have frequent side roads and frontage accesses. Site 2 has a speed limit of 30 mph and Site 3 has a speed limit of 40mph. The characteristics of these sections of the corridor are shown in Figure 3-16 and Figure 3-17.

Figure 3-16: A256/A254 Link Capacity - Site 2 (©2017 Google)

Figure 3-17: A256/A254 Link Capacity - Site 3 (©2017 Google)

3.3.6 The theoretical link capacity at each of the 3 sites has been compared with the worst case one-way peak hour flow to provide an indication of the current operation of the links. These comparisons are shown in Table 3-19.

	Road Type	Carriageway Width (m)	Theoretical capacity (one-way)	Max Hourly flow (one-way)	Ratio of flow/capacity
Site 1	UAP4	6.75	900	780 (AM/SB)	0.87
Site 2	UAP3	6.75	1110	1005 (PM/SB)	0.91
Site 3	UAP3	6.75	1110	1120 (AM/NB)	1.00
	UAP2	6.75	1260	1120 (AM/NB)	0.88

Table 3-19: A254/A256 Corridor – Indicative Link Flow/Capacity

3.3.7 The above table indicates that the sites along the study corridor are operating very close to their theoretical capacity. In particular, the A256 to the south of the junction with Haine Road (site 3) has met its capacity, when judged as UAP3, as per the above assessment. As the A256 Haine Road/New Haine Road is quite varied along its route it has seemed useful to provide the range using UAP3 and UAP2.

3.4 Average Journey Times

3.4.1 Average journey times through the corridor have been established using the Basemap software 'Highways Analyst'. Average link times were calculated for the route through

the corridor in both directions for the AM peak (0800 – 0900) and PM peak (1700 - 1800) peaks; and for an overnight period[1] assumed to reflect free-flow conditions.

3.4.2 By comparing journey times during free flow and peak times scenarios the average level of delay observed during peak periods has been established.

3.4.3 The journey time corridor used for this calculation is that shown in Figure 1-11-1, from the A299 Hengist Way/A256 Richborough Way roundabout junction near Cliffsend to the 'Victoria traffic lights' junction in Margate.

3.4.4 Table 3-20 displays the average journey times for the A256/A254 corridor.

Direction	Distance (kms)	AM (mm:ss)	PM (mm:ss)	Free Flow* (mm:ss)	Delay	
					AM	PM
SB	7.4	09:52	11.01	08:21	01:32	02:41
NB	7.3	11:21	11:47	08:28	02:52	03:18
Total					04:24	05:59

Table 3-20: A256/A254 Corridor – Average Journey Times and Delay

3.4.5 The table shows that the corridor experiences delay in both directions when compared with free-flow conditions. The PM peak hour experiences more delay in total than the AM peak hour, by over one and a half minutes. There is also a notably larger delay in the northbound direction with approximately three minutes delay experienced in both the AM and PM peak hour. This is a level of delay which becomes notable, adding an additional third of the journey time of this route from an important suburb to the town centre.

3.4.6 Given that the link capacity of the Haine Corridor portion of the A256 is close to being reached, it is expected that anything other than a slight increase in traffic flows could have a significant impact on journey times, and journey time reliability, within the corridor without material improvements to the link as a whole being delivered.

3.5 Highway Safety Record

3.5.1 Personal Injury Crash records (PICs) have been analysed for a period of 3 years and 9 months from 1st June 2012 to 31st March 2016. This period of analysis excludes data recorded prior to the opening of the East Kent Access link road.

3.5.2 A desktop analysis has been carried out of reported PICs along the 7.6 km (4.7 mile) A254/A256 study area between Victoria lights and Sevenscore roundabout to assist in

[1] Typically 1am to 5am but extended where data was unavailable between these times.

the identification of existing issues and problems on A254/A256 corridor.

3.5.3 An initial review of the data for the study area identified that there were a total of 144 PICs during the 3 year 9 month time period. Of these: 1 (1%) were Fatal and 13 (9%) were classified as Serious incidents. The remaining 130 (90%) of PICs were deemed to be Slight in severity.

3.5.4 Table 3-21 shows the number of crashes by severity for each year and Figure 3- shows the locations of these PICs.

	2012 to 2013[2]	**2013 to 2014**	**2014 to 2015**	**2015 to 2016**
Slight	24	36	36	34
Serious		2	4	7
Fatal				1

Table 3-21: A256/A254 Corridor - Crashes by Year and Severity[3]

[2] March, April and May 2012 not included in this data set EKA road not complete until May 2012.
[3] Yearly periods run from the March to February of the following year.

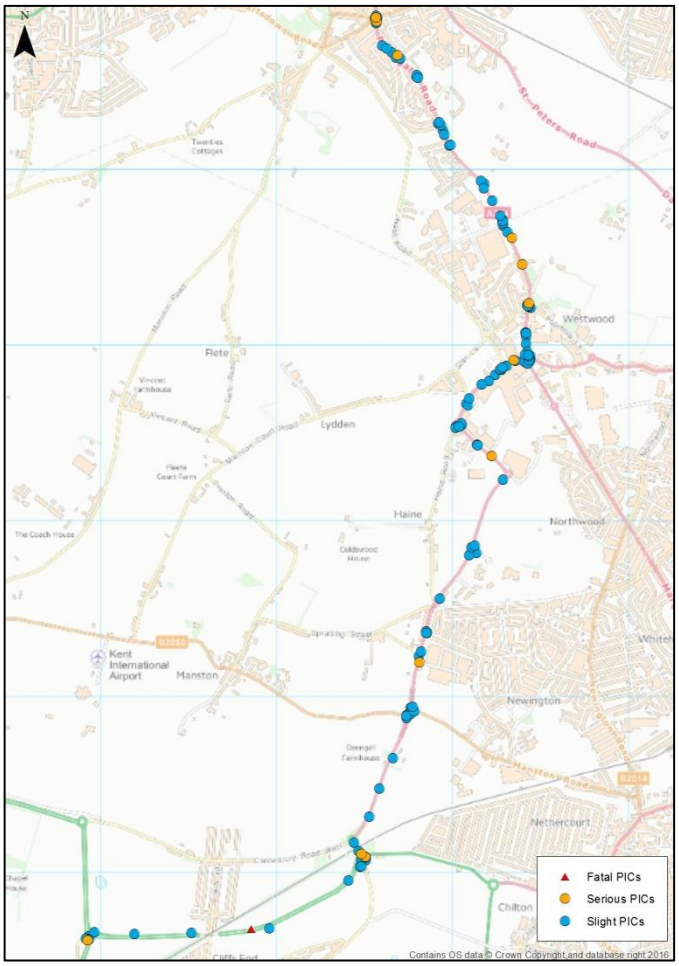

Figure 3-19: A256/A254 Corridor - PIC Locations by Severity

3.5.5 Figure 3-19 indicates that crashes have occurred throughout the route; however, clusters of crashes have been observed at most major junctions. Table 3-22 reports the total number of PICs for all junctions where 4 or more incidents occurred within the study period.

Junction	PICs		
	Slight	Serious	Total
Westwood Cross	20	1	**21**
Victoria Lights	8	3	**11**
Poorhole Lane	10	1	**11**
Manston Road	9	-	**9**
Lord of the Manor (s)	7	1	**8**
Haine Road (n)	6	-	**6**
Enterprise Road	5	-	**5**

Junction	PICs		
QEQM	5	-	**5**
Perkins Avenue	3	1	**4**

Table 3-22: A256/A254 - PICs at Junctions

3.5.6 As can be seen Westwood Cross has the highest recorded number of crashes with 21 incidents within the study period. Victoria lights and Poorhole Lane both have 11 incidents recorded for the time period with 3 of these being serious incidents at Victoria lights.

Vulnerable Road Users

3.5.7 Table 3-23 shows the total number of injuries sustained by vulnerable road users regardless of other vehicles involved.

3.5.8 45 (31%) of the total number of PICs involved a pedestrian, cyclist, mobility scooter user or a motorcyclist and at least one other motor vehicle. A further 12 incidents were reported which involved a pedestrian, cyclist or a motorcyclist but did not involve any other motorised vehicles. In these 57 crashes, 59 individuals from this more vulnerable group sustained injury.

	Severity	2012-2013	2013-2014	2014-2015	2015-2016	Total
Pedestrians	**Slight**		2	3		**5**
	Serious				2	**2**
Cyclists	**Slight**	7	4	5	6	**22**
	Serious			2	1	**3**
Motorcyclists	**Slight**	4	1	6	6	**17**
	Serious		2	2	3	**7**
Mobility Scooters	**Fatal**				1	**1**
Total		**11**	**9**	**18**	**19**	**57**

Table 3-23: A256/A254 Corridor - Vulnerable Road User PICs by Year

Summary

3.5.9 In terms of vulnerable road users the crash record suggests that there are no particular hotpots in terms of highway safety hazards for pedestrians, cyclists and motorcyclists.

3.5.10 Victoria Lights has been recorded as having the highest number of pedestrian incidents with 4 of the 7 incidents seen corridor wide occurring in this location. In general the volume of pedestrian incidents on the corridor is considered to be relatively low.

3.5.11 There are a high proportion of motorcycle related incidents (17%). Westwood Cross and the southernmost Lord of The Manor roundabout are both recorded as having 4 of these incidents with Sevenscore roundabout being recorded as having 3 motorcycle related incidents.

3.5.12 Westwood Cross, Victoria Lights, Poorhole Lane and Manston Road are shown to have the poorest accident record with regard to motorised vehicles in general.

Comparison with National Values

3.5.13 An annual crash rate has been calculated based on the observed crashes and using Annual Average Daily Flow (AADF) values as taken from the DfT website. The crash rate is based upon a weighted average AADF and route length. Table 3-24 shows the average total route length, the average AADF and calculated crash rate.

Start Junction	End Junction	Distance (m)	KM	AADT Count	No Crashes	Crashes per year	Annual no Cars	Annual Distance Travelled (km)	Million kms of Travel	Crash Rate
Sevenscore Roundabout	Victoria Lights	7300	7.300	17474	144	28.8	6378000	46559400	46.6	**0.62**

Table 3-24: A256/A254 Corridor - Crash Rate

3.5.14 The calculated crash rate is 0.62 PIC accidents per million vehicle kilometres travelled, however, it should be noted that this is an average across a 7.3 km route which is made up of a variety of road types and speed limits including the very modern section of A254 Hengist Way and Westwood Cross alongside older sections of route.

3.5.15 The corridor crash rate has been compared to appropriate national crash rate values reported in WebTAG COBALT data tables as shown in Table 3-25. A range of national crash rates have been selected to reflect the various characteristics of the study corridor. The corridor crash rate of 0.62 is considered to be broadly comparable with national values.

Accident Rates and Change Factors					
Road Type	**Speed Limit (mph)**	**Accident Rate**	**Road Description**	**Areas of comparison**	**Approximate % route**
4	30/40	0.532	Modern S2 Roads	New Haine Road / Westwood Cross	18%
8	30/40	0.863	Older S2 A Roads	North of Manston Road	47%
8	>40	0.244	Older S2 A Roads	South of Manston Road / North of Poorhole Lane to Victoria lights	11%
10	>40	0.107	Modern D2 Roads	Hengist Way	25%

Table 3-25: Highway Crash Rates[4]

3.6 Summary

3.6.1 In summary, the collated data indicates that the A256/A254 corridor generally operates with moderate levels of queueing and delay. The study has identified that the Haine Road Corridor is approaching its design link capacity; as such a modest increase in traffic flow has the potential to generate a disproportionate increase in journey time delay during times of peak traffic demand.

3.6.2 A number of junctions observe notable levels of peak hour queueing and delay. In particular the A299 Hengist Way/A256 Richborough Way, Westwood roundabout, the Victoria Traffic Lights A254 Ramsgate Rd /Enterprise Rd and A254 Ramsgate Road / QEQM Hospital junctions all observe more significant queueing during one or more of the weekday peak periods. At least one approach at all of these junctions observes queues in excess of 20 vehicles which suggest some capacity issues are present.

3.6.3 The most severe congestion currently observed occurs at the Westwood roundabout and Victoria Lights junctions where more sustained and significant queueing was recorded.

[4] Cobalt 3 - Update of Highway Accident Rates for Use in Scheme Appraisal - TRL 2012 (Table 7-2 for Overall Accident Rates (2008-2010); pg.26 and Table 4/1 for Accident Rate Reduction Factor (β) (personal injury accidents pmvk - 2009 Base); pg.42)

3.6.4 In terms of highway safety there are clusters of crashes at some of the key junctions, in particular at the Westwood roundabout, however, in general the route is considered to have a lower than average annual crash rate.

4 A28 Canterbury Road – Current Traffic Conditions

4.1 Overview

4.1.1 Existing traffic conditions along the A28 corridor have been captured through the analysis of a range of data sources. The following data collection and analysis has been undertaken at key junctions within the study area:

- Junction Turning Counts (JTC); and
- Queue Length Surveys.

4.1.2 In addition, average journey times have been established through the corridor using Highways Analyst software. Furthermore, personal injury crash records have been analysed to determine historic highway safety considerations within the corridor.

4.1.3 The data has been analysed in order to better understand traffic movements and identify where issues exist. The following section presents the analysis for each survey.

4.2 Junction Operation

4.2.1 The current traffic conditions at the key junctions on the study corridor have been captured through junction turning count (JTC) surveys and queue length surveys. The JTC surveys were provided by third parties and the queue length surveys were collected at the majority of these junctions as part of this study to further contribute to the understanding of the operation of the major junctions along the study corridor.

4.2.2 Queue length surveys were undertaken only at junctions considered to experience delays in the AM and PM peak periods. Junctions where queue length surveys were not undertaken are identified in the list overleaf.

4.2.3 The A28 Canterbury Road/Station Road (The Square, Birchington) junction was not captured as part of the third party data collection exercise. This junction is known to experience severe queueing during the peak periods therefore the JTC was collected as part of this study.

4.2.4 The following junctions have been used assessed as part of this corridor study:

Junction 1 – A299 Thanet Way/A28 Canterbury Rd (St Nicholas roundabout) (no queue length survey);
Junction 2 – A28 Canterbury Rd/Seamark Rd (no queue length survey);
Junction 3 – A28 Canterbury Rd/Park Lane;
Junction 4 – A28 Canterbury Rd/Station Rd (Birchington Square);
Junction 5 – A28 Canterbury Rd/St Mildreds Rd/ Minster Rd;
Junction 6 – A28 Canterbury Rd/Garlinge High St;
Junction 7 – A28 Canterbury Rd/George V Ave/ Maynard Ave;
Junction 8 – A28 Canterbury Rd/A28 Marine Terrace/Station Approach (no queue length survey); and
Junction 9 – A28 Marine Terrace/A254 Marine Gardens/Marine Drive.

4.2.5 The locations of the junction turning count surveys are shown in Figure 4-1

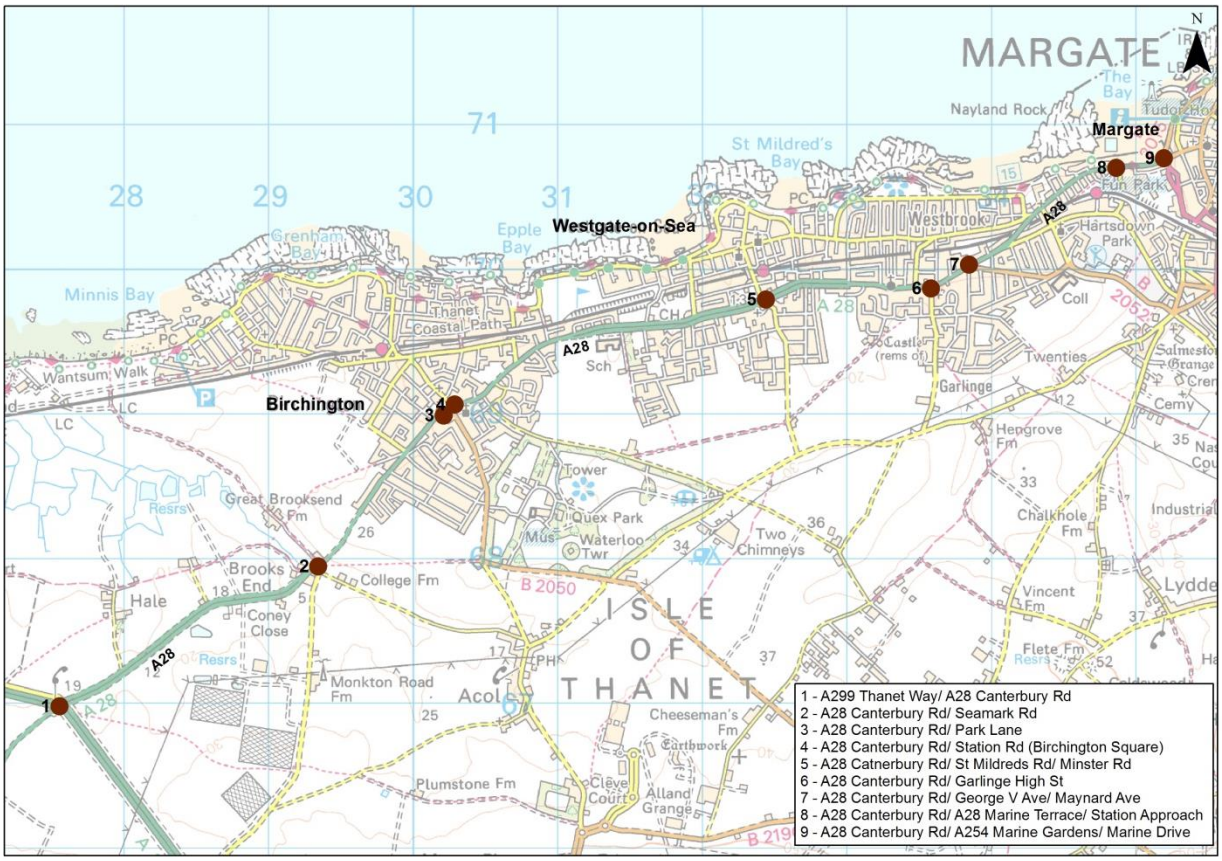

Figure 4-1: A28 Corridor - Junction Turning Count Survey Locations

4.2.6 The JTC surveys were carried out on Tuesday 12th January 2017 between the hours of 07:30 and 09:30, and 16:30 and 18:30. The Square, Birchington JTC and the queue length surveys were carried out on Wednesday 1st March 2017.

4.2.7 The data is intended to provide a snapshot of existing traffic conditions along the A28 corridor. The exact AM and PM peak hours have been determined for each individual junction and reported in Table 4-1.

Location		Weekday AM Peak	Weekday PM Peak
1	A299 Thanet Way/ A28 Canterbury Rd (St Nicholas roundabout)	07:30-08:30	16:45-17:45
2	A28 Canterbury Rd/ Seamark Rd	07:45-08:45	16:45-17:45
3	A28 Canterbury Rd/ Park Lane	07:45-08:45	16:45-17:45
4	A28 Canterbury Rd/ Station Rd (Birchington Square)	08:00-09:00	17:00-18:00
5	A28 Canterbury Rd/ St Mildreds Rd/ Minster Rd	08:00-09:00	17:00-18:00
6	A28 Canterbury Rd/ Garlinge High St	08:00-09:00	17:00-18:00
7	A28 Canterbury Rd/ George V Ave/ Maynard Ave	08:00-09:00	17:00-18:00
8	A28 Canterbury Rd/ A28 Marine Terrace/ Station Approach	08:15-09:15	16:45-17:45
9	A28 Marine Terrace/ A254 Marine Gardens/ Marine Drive	08:15-09:15	16:45-17:45

Table 4-1: A28 Corridor - Peak Hour by Junction

4.2.8 The queue length results tables have been colour coded with a RAG rating in order to easily identify lengths of queues across the surveyed hour. Table 4-2 provides the key to the queue length tables in the following sections.

Queue Length	Approximate Distance (m)
0 – 9 vehicles	0 - 52
10-19 vehicles	58 - 110
20-29 vehicles	115 - 167
30 + vehicles	173+

Table 4-2: Queue Length RAG Ratings

Junction 1 – A299 Thanet Way/A28 Canterbury Rd

4.2.9 The A299 Thanet Way/A28 Canterbury Road (St Nicholas) roundabout is a 5-arm junction located approximately 3.5km west of Birchington Village Square via the A28 Canterbury Road. The A28 Canterbury Road also continues west from this junction towards Canterbury. The A299 Thanet Way heads west towards Herne Bay, the M2 and London whilst eastwards is Ramsgate and Westwood Cross. Potten Street Road is a small country road leading to farms and a few residential buildings.

Observed Turning Movements

4.2.10 The peak hour turning movements are shown in Figure 4-2.

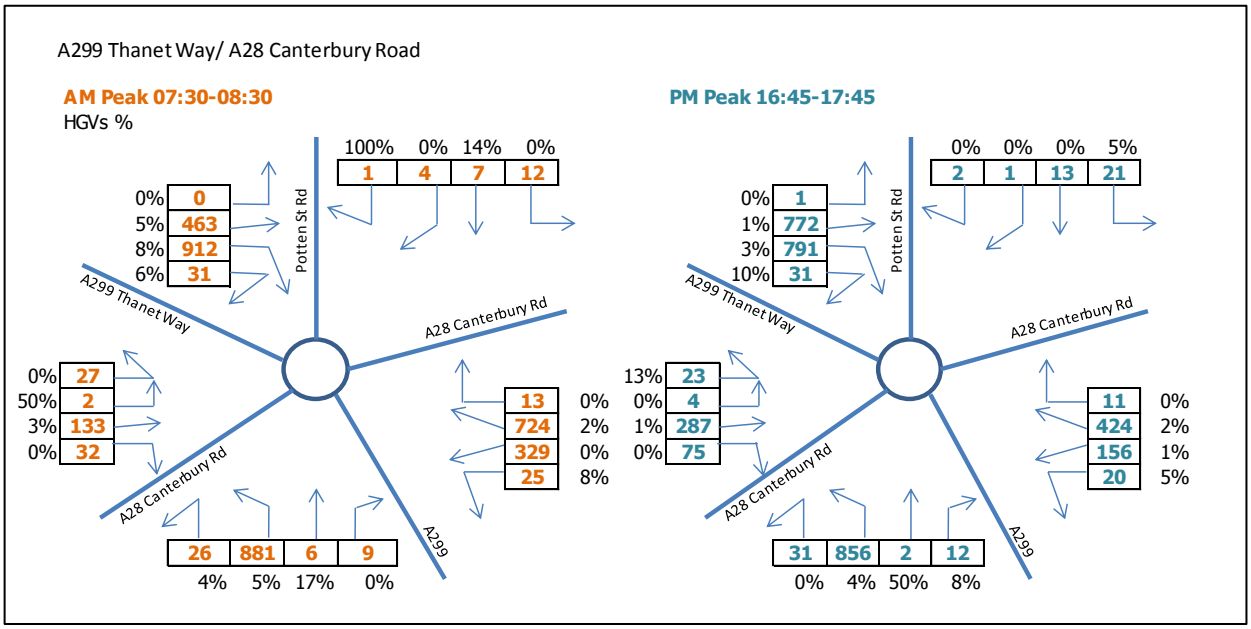

Figure 4-2: A299 Thanet Way/A28 Canterbury Rd – Turning Movements (Vehicles)

4.2.11 In the AM peak hour, over 900 vehicles turn from the Thanet Way to the A299 towards Ramsgate. In addition from this direction, nearly 500 vehicles turn towards Birchington on the A28 Canterbury Road. From the A299 east the overwhelmingly dominant turn is to the Thanet Way with 881 vehicles turning this way. From the direction of Birchington on the A28, most movements are towards the Thanet Way and Canterbury with 724 vehicles and 329 vehicles respectively. There is a significantly lower flow coming from Canterbury with a total of 194 vehicles making turns at this junction.

4.2.12 In the PM peak, the flows from the A299 Thanet Way to the A299 east and A28 Birchington becomes far more balanced than in the AM peak with 791 vehicles continuing on the A299 and 772 vehicles going towards Birchington. The flow from Birchington on the A28 is nearly half that observed in the AM peak on this arm.

Junction 2 – A28 Canterbury Rd/Seamark Rd

4.2.13 The A28 Canterbury Road/Seamark Road junction is located on the western outskirts of Birchington village, at the end of the dual carriageway leading from St Nicholas roundabout. The speed limit in the vicinity of this junction is 50 mph on the dual carriageway which lowers to 40 mph heading east towards the village.

4.2.14 This priority junction is located at the foot of Brooksend Hill and there is access to a private road (Great Brooksend Farm) opposite Seamark Road. Small slip roads are present for exiting and joining the westward moving traffic (travelling away from Birchington) and a turning bay for right turning traffic into Seamark Road.

Observed Turning Movements

4.2.15 The peak hour turning movements are shown in Figure 4-3.

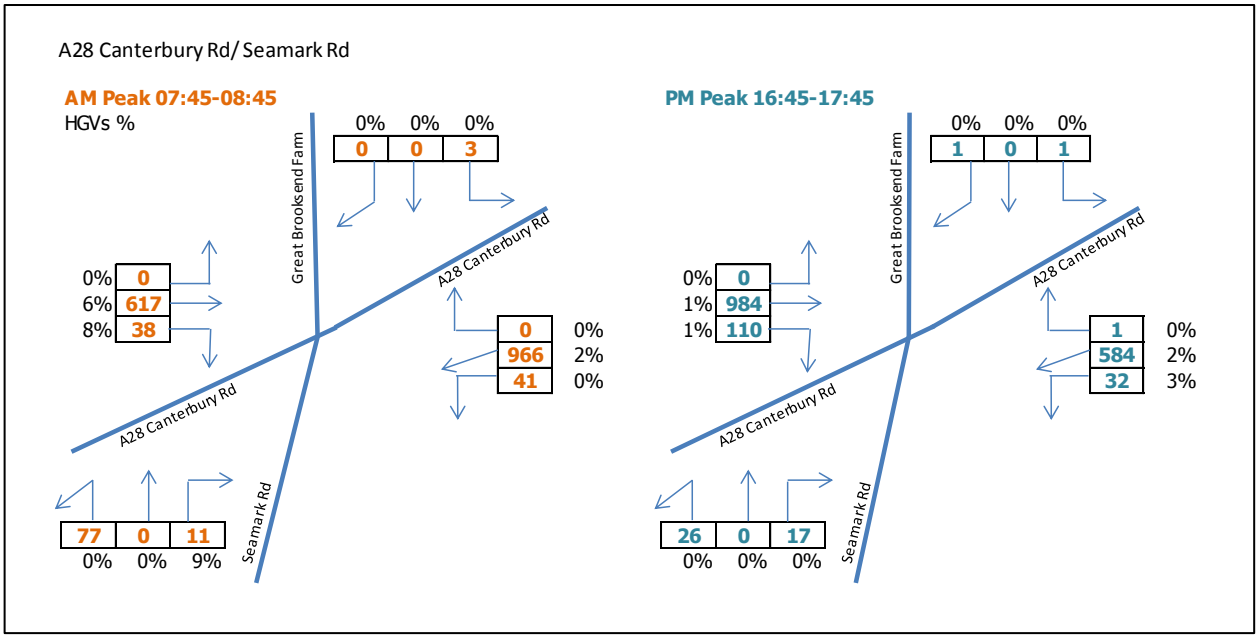

Figure 4-3: A28 Canterbury Rd/Seamark Rd – Turning Movements (Vehs)

4.2.16 The significantly dominant flow at this junction is on the A28 Canterbury Road heading into and out of Birchington village. There are over 650 vehicles travelling towards Birchington in the AM peak and 1007 vehicles travelling away from the Birchington. Around 40 vehicles turn into Seamark Road from both the east and westbound A28, whilst 77 vehicles turn west from Seamark Road and 11 turn east towards Birchington.

4.2.17 In the PM peak, 1094 vehicles travel east towards Birchington with 616 vehicles travelling away from Birchington. From the eastbound A28 110 vehicles turn right into Seamark Road whilst only 32 turn left from the westbound A28. From Seamark Road, 26 turn west and 17 turn east towards Birchington.

Junction 3 – A28 Canterbury Rd/Park Lane

4.2.18 The A28 Canterbury Road/Park Lane priority junction is located immediately south of the Birchington Square roundabout junction. Due to this proximity, at peak times it can be extremely difficult to get into and out of this junction and movements can also be hindered due to the width restriction on Park Lane approximately 10 metres from the entrance to the junction.

4.2.19 In addition, a pedestrian crossing is located to the west of Park Lane and is highly utilised, particularly around school start and finish times, and further inhibits movements at this junction.

Observed Turning Movements

4.2.20 The peak hour turning movements are shown in Figure 4-4.

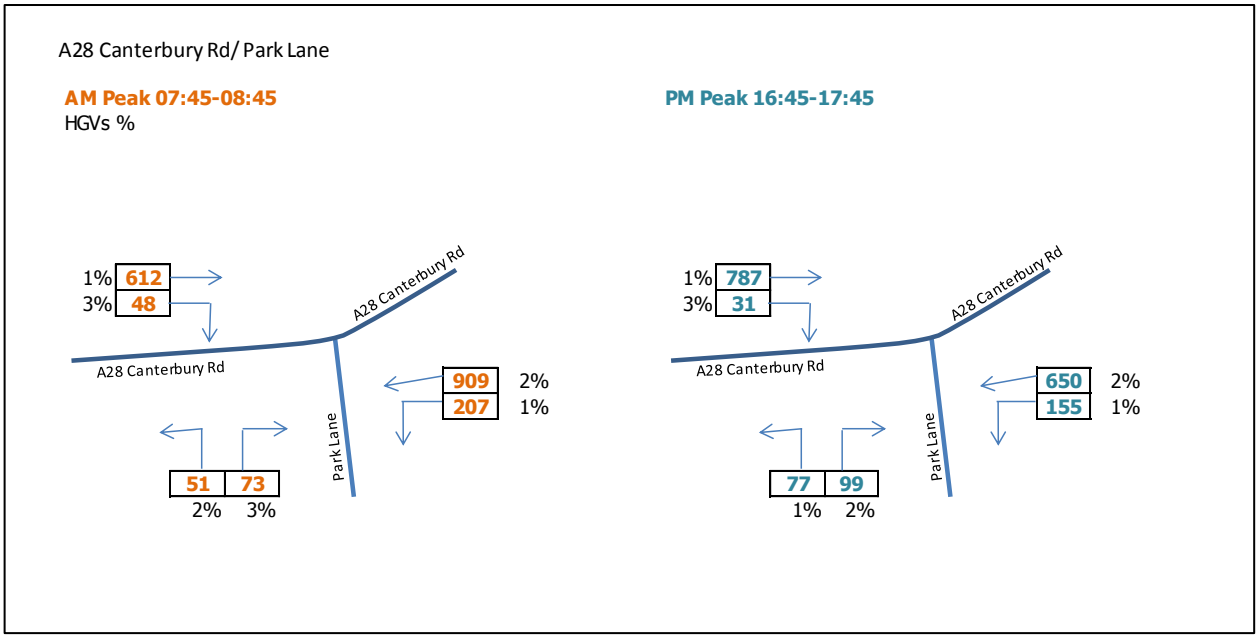

Figure 4-4: A28 Canterbury Rd/Park Lane – Turning Movements (Vehicles)

4.2.21 In the AM peak, 124 vehicles turn out of Park Lane with approximately 60% turning right towards Birchington Square. From the direction of Birchington Square, over 200 vehicles turn left into Park Lane whilst 909 vehicles head straight-on westwards on the A28. From the west there are 612 vehicles that continue straight towards Birchington Square and 48 vehicles turn right into Park Lane.

4.2.22 In the PM peak, 176 vehicles turn out of Park Lane, whilst 155 vehicles turn left into Park Lane from the direction of Birchington Square. From the west there are 31 vehicles which turn right into Park Lane. From the east 650 vehicles continue on the A28 whilst 787 continue on the A28 from the west towards Birchington Square.

Observed Queue Lengths

4.2.23 Table 4-3 displays the queue length surveys results for the junction.

	A28 Canterbury Rd E	**Park Lane**	**A28 Canterbury Rd W**
	Lane 1	Lane 2	Lane 1
07:45-07:50	4	3	12
07:50-07:55	4	1	5
07:55-08:00	4	3	7
08:00-08:05	4	2	12
08:05-08:10	4	3	10
08:10-08:15	3	3	8
08:15-08:20	4	5	8
08:20-08:25	4	4	14
08:25-08:30	4	3	20
08:30-08:35	4	3	9
08:35-08:40	4	2	9
08:40-08:45	4	3	15
Total	**47**	**35**	**129**
16:45-16:50	4	3	10
16:50-16:55	0	3	7
16:55-17:00	4	6	5
17:00-17:05	4	3	22
17:05-17:10	4	3	21
17:10-17:15	4	4	25
17:15-17:20	4	3	23
17:20-17:25	4	3	23
17:25-17:30	4	2	24
17:30-17:35	4	3	26
17:35-17:40	0	3	23
17:40-17:45	3	3	24
Total	**39**	**39**	**233**

Table 4-3: A28 Canterbury Rd/Park Lane – Queue Lengths (Vehicles)

4.2.24 In both the AM and PM peak hour the longest queues are observed on the A28 Canterbury Road west. It should be noted that queue lengths are consistently four vehicles on the A28 Canterbury Road east and this would be the length in vehicles to the next junction (Birchington Square mini roundabout) therefore there it is possible that queueing extends further than this next junction however it can't be reflected in the following results.

4.2.25 In addition, the queueing on Park Lane is limited due to the narrow one lane section just beyond the give way line; therefore the consistent queueing of around three vehicles indicates further queueing beyond the view of the surveyors.

4.2.26 In the AM peak hour, the queueing on A28 Canterbury Road west reaches over 10 vehicles for nearly half of the peak hour. The queues on this arm are much longer in the PM peak hour with much of the hour experiencing queueing of over 20 vehicles. Some of the queueing on this arm could be explained by right turning vehicles into Park Lane. The queueing on this arm is conserved to be due, in part, to the proximity to the pedestrian crossing and the Birchington Square (A28 Canterbury Road/Station Road) junction.

Junction 4 – A28 Canterbury Rd/Station Rd (Birchington Square)

4.2.27 The Square, Birchington is a 3-arm mini roundabout junction located on the A28 Canterbury Road at the south eastern extent of Station Road in Birchington village. The junction is known to suffer from congestion during peak periods and was an AQMA in itself before the AQMA was extended to include Thanet urban area. Station Road is the main village thoroughfare through Birchington village, and from The Square junction heads north-west to Birchington train station.

Observed Turning Movements

4.2.28 The peak hour turning movements are shown in Figure 4-5.

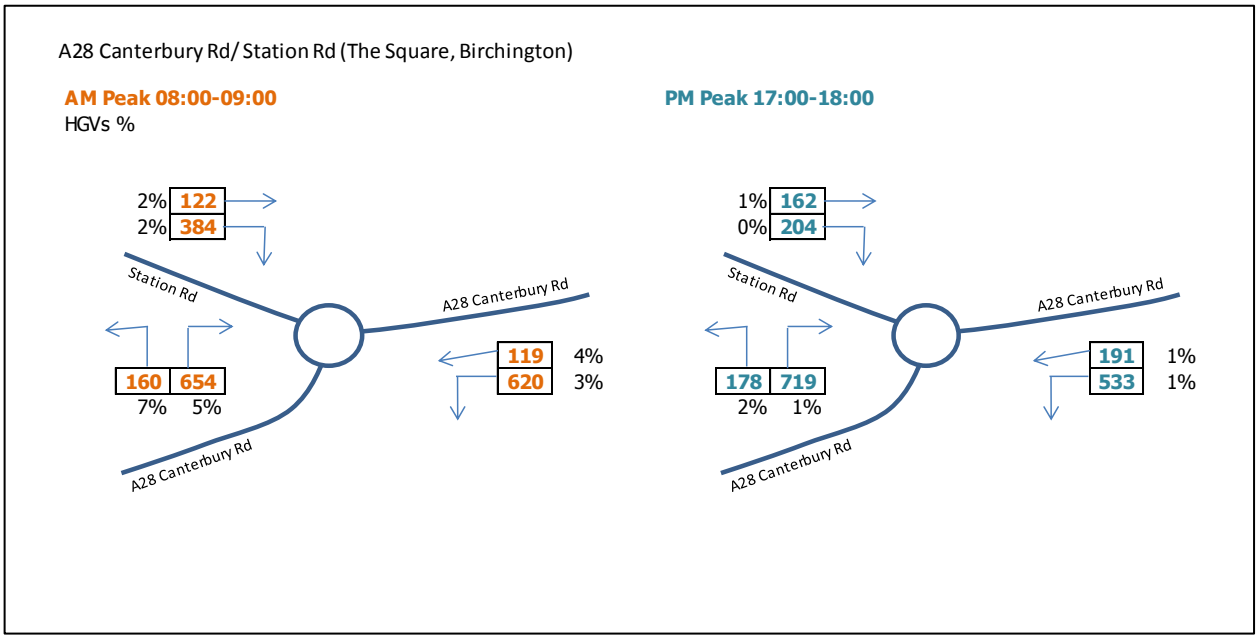

Figure 4-5: The Square, Birchington – Turning Movements (vehicles)

4.2.29 In the AM peak, there are over 800 vehicles travelling east on the A28 Canterbury Road west and of these over 650 vehicles make the right turn onto A28 Canterbury Road east. In addition, 122 vehicles travel from Station Road eastwards onto A28 Canterbury Road east. From Station Road, nearly 400 vehicles make the right turn onto A28 Canterbury Road west and another 620 travel from A28 Canterbury east to west.

4.2.30 In the PM peak hour, similar volumes of traffic and movements are seen to travel through this junction. Eastward flows on the A28 Canterbury Road are slightly higher than the AM peak at nearly 900 vehicles and there are 724 vehicles travelling westwards on the A28 Canterbury Road which is nearly the same as the AM peak however a higher proportion of this flow turns into Station Road. There is also a lower flow out of Station Road with 366 vehicles exiting.

Observed Queue Lengths

4.2.31 Table 4-4 displays the queue length survey results for the junction. In both peak hours, Lane 2 of the A28 Canterbury Road west arm of this junction consistently experiences of around 4/5 vehicles. This is approximately how far back the Park Lane priority junction is. This provides some support to the explanation above for the long queues on the A28 Canterbury Road west of the Park Lane junction probably as a result of the Birchington Square junction not solely the impact of right turners into Park Lane. This also means the queueing at this junction is not directly reflected in the results in Table 4-4.

	A28 Canterbury Rd E		**A28 Canterbury Rd W**		**Station Road**	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:00-08:05	9	2	0	4	1	18
08:05-08:10	14	2	0	5	1	20
08:10-08:15	15	3	0	4	1	10
08:15-08:20	24	0	2	4	0	5
08:20-08:25	28	2	1	5	2	8
08:25-08:30	21	1	0	4	1	4
08:30-08:35	7	2	1	4	3	8
08:35-08:40	5	2	0	4	4	9
08:40-08:45	14	1	0	4	1	16
08:45-08:50	13	3	1	3	1	15
08:50-08:55	6	2	1	5	2	10
08:55-09:00	3	2	2	4	3	4
Total	**159**	**22**	**8**	**50**	**20**	**127**

	A28 Canterbury Rd E		A28 Canterbury Rd W		Station Road	
17:00-17:05	14	3	1	4	2	15
17:05-17:10	6	2	0	4	3	4
17:10-17:15	7	1	1	5	1	3
17:15-17:20	7	2	2	5	1	5
17:20-17:25	10	1	1	4	2	6
17:25-17:30	4	2	0	4	1	2
17:30-17:35	4	1	1	4	4	3
17:35-17:40	2	4	0	4	2	4
17:40-17:45	2	4	1	4	2	4
17:45-17:50	5	4	1	4	2	3
17:50-17:55	4	2	0	5	2	3
17:55-18:00	6	1	1	5	2	4
Total	**71**	**27**	**9**	**52**	**24**	**56**

Table 4-4: The Square, Birchington – Queue Lengths (Vehicles)

4.2.32 The A28 Canterbury Road east arm of this junction experiences queues of over 10 vehicles in two distinct blocks within the peak period. Queues build gradually peaking at a high of 28 vehicles between 8:05 AM and 8:30 AM. At around 8:40 AM queues of up to 14 vehicles are seen for approximately 10 minutes. Queueing during the PM peak hour shows occasional spikes of moderate queueing.

4.2.33 Given the junction's proximity with the adjacent A28 Canterbury Rd/Park Lane junction it is important to consider the datasets together. The queues observed on the A28 eastbound approach to the junctions is considered to be due to the operation of the Birchington Square junction in addition to right turning traffic into Park Lane.

Junction 5 – A28 Canterbury Rd/St Mildreds Rd/Minster Rd

4.2.34 The A28 Canterbury Road/St Mildreds Road/Minster Road is a 4-arm signalised junction located in Westgate. The A28 at this junction is a 40 mph dual carriageway; whilst the speed limit on St Mildreds Road and Minster Road is 30 mph. Minster Road is a predominantly residential road with open fields to its southern extent and connects by priority junction to Shottendane Road. St Mildreds Road provides access to the shopping parade of Westgate just to the north of the junction.

4.2.35 Formal pedestrian crossing points are located across both arms of the A28 Canterbury Road at this junction, in the form of staggered crossings. On both St Mildreds Road and Minster Road dropped curbing and tactile paving is present however no formal

crossing point.

Observed Turning Movements

4.2.36 The peak hour turning movements are shown in Figure 4-6.

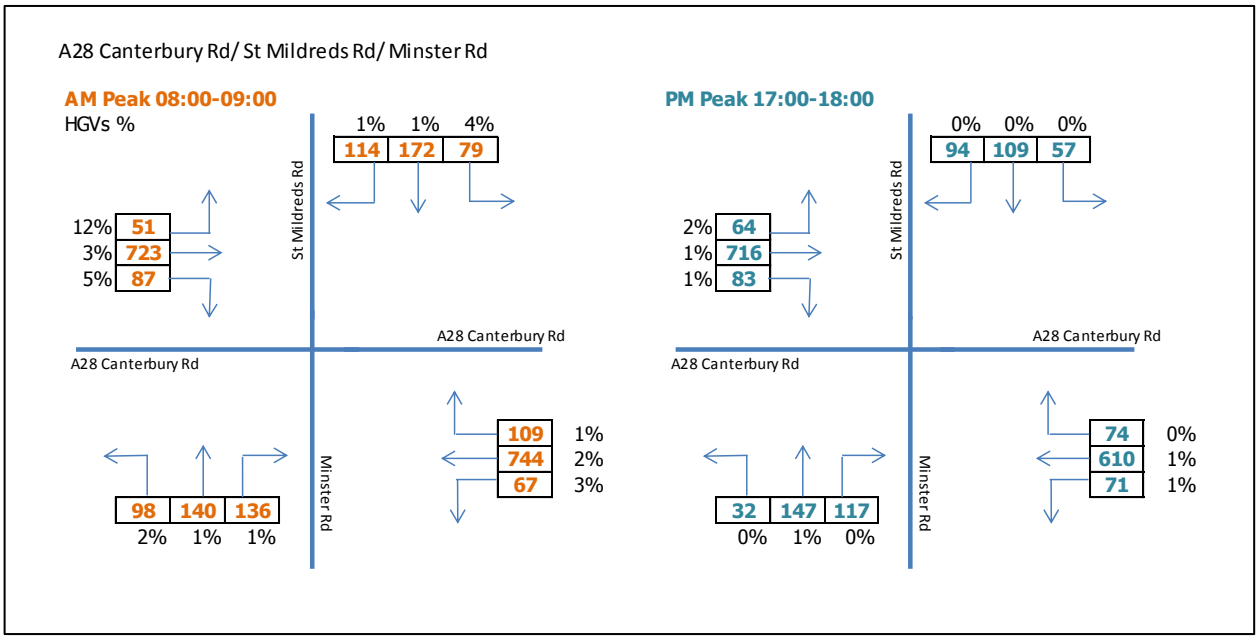

Figure 4-6: A28 Canterbury Rd/St Mildreds Rd/Minster Rd – Turning Movements (Vehicles)

4.2.37 In the AM peak hour, over 700 vehicles travel straight across this junction in both eastbound and westbound directions on the A28. There are around 370 vehicles turning out of both St Mildreds Road and Minster Road.

4.2.38 In the PM peak hour there are less than 300 vehicles turning out of both St Mildreds Road and Minster Road. There are 610 vehicles travelling westbound on the A28 and 716 vehicles travelling eastbound.

Observed Queue Lengths

4.2.39 Table 4-5 displays the queue length survey results for the AM peak hour at the junction. Queueing on both of the A28 Canterbury Road arms is frequently over 10 vehicles in both Lanes and queueing of over 30 vehicles is frequent in Lane 2. Queues on St Mildreds Road and Minster Road are shorter and occasionally over 10 vehicles. In Lane 1 of the Minster Road arm the queues near 20 vehicles in 6 five minute periods but they are sporadic and not sustained.

St Mildreds Road			A28 Canterbury Rd E			Minster Rd			A28 Canterbury Rd W		
	Lane 1	Lane 2		Lane 1	Lane 2		Lane 1	Lane 2		Lane 1	Lane 2
08:01:25	10	4	08:00:35	13	12	08:00:50	17	0	08:02:01	7	17
08:03:44	2	10	08:02:51	6	17	08:03:08	13	2	08:04:16	9	8
08:06:03	7	7	08:05:05	8	28	08:05:27	3	4	08:06:35	10	16
08:08:24	5	2	08:07:24	15	21	08:07:47	4	3	08:08:39	4	9
08:10:25	6	2	08:09:28	11	27	08:09:50	12	0	08:10:47	11	15
08:12:29	5	5	08:11:36	11	25	08:11:53	5	4	08:13:07	8	11
08:14:54	7	4	08:13:56	13	29	08:14:18	9	2	08:15:13	11	13
08:16:59	7	5	08:16:01	6	21	08:16:23	11	3	08:17:31	6	9
08:19:18	8	2	08:18:19	6	22	08:18:42	7	4	08:19:43	4	11
08:21:21	7	0	08:20:32	11	26	08:20:45	6	4	08:21:38	3	12
08:23:23	7	1	08:22:25	10	24	08:22:47	8	1	08:23:39	5	5
08:25:23	4	2	08:24:27	8	19	08:24:47	9	4	08:25:45	8	12
08:27:32	6	2	08:26:36	12	22	08:26:57	18	2	08:28:08	14	13
08:29:56	6	3	08:28:57	18	31	08:29:20	19	3	08:30:30	11	23
08:32:18	2	5	08:31:21	16	33	08:31:42	18	3	08:32:52	14	26
08:34:43	12	6	08:33:44	21	32	08:34:08	11	6	08:35:16	15	25
08:37:06	5	8	08:36:07	20	30	08:36:30	14	5	08:37:40	14	26
08:39:33	16	8	08:38:32	28	19	08:39:01	18	3	08:40:10	23	35
08:41:57	6	14	08:40:58	19	25	08:41:21	11	3	08:42:32	27	36
08:44:21	8	10	08:43:23	21	20	08:43:45	7	3	08:44:50	23	29
08:46:39	7	13	08:45:42	14	20	08:46:05	3	6	08:47:09	24	35
08:48:58	8	13	08:48:01	19	19	08:48:23	9	3	08:49:28	17	23
08:51:05	6	14	08:50:20	10	13	08:50:29	10	3	08:51:35	8	16
08:53:01	11	6	08:52:23	5	8	08:52:25	7	3	08:53:33	11	21
08:55:18	3	3	08:54:20	14	14	08:54:43	2	4	08:55:36	10	12
08:57:22	4	1	08:56:24	9	13	08:56:46	19	0	08:57:56	8	15
08:59:43	2	2	08:58:45	13	16	08:59:06	12	4			

Table 4-5: A28 Canterbury Rd/St Mildreds Rd/Minster Rd AM Peak – Queue Lengths (Vehicles)

4.2.40 Table 4-6 displays the queue length survey results for the PM peak hour at the junction. The table highlights shorter queues in the PM peak hour compared to the AM. The longest queues are again observed on the A28 Canterbury Road east and west arms of this junction. Queues of between 10 and 15 vehicles are frequent and sustained in Lane 2 of Canterbury Road east. Queues on St Mildreds Road and Minster Road are low and only once reaches over 10 vehicles in Lane 1 of St Mildreds Road.

St Mildreds Road			A28 Canterbury Rd E			Minster Rd			A28 Canterbury Rd W		
	Lane 1	Lane 2		Lane 1	Lane 2		Lane 1	Lane 2		Lane 1	Lane 2
17:00:42	1	7	17:02:02	0	3	17:00:06	9	4	17:01:12	11	14
17:02:49	9	4	17:04:00	6	12	17:02:13	7	4	17:03:12	2	11
17:04:54	4	1	17:06:00	12	11	17:04:18	3	4	17:05:11	10	15
17:07:03	3	8	17:08:22	13	14	17:06:26	7	5	17:07:30	18	20
17:09:19	13	1	17:10:38	5	12	17:08:44	5	5	17:09:47	13	17
17:11:24	9	0	17:12:29	7	13	17:10:47	8	2	17:11:39	10	13
17:13:22	5	0	17:14:38	13	14	17:12:46	3	4	17:13:49	8	12
17:15:35	4	3	17:16:36	8	11	17:15:00	2	4	17:15:45	5	10
17:17:32	5	2	17:18:35	3	5	17:16:56	5	1	17:17:46	7	8
17:19:15	5	2	17:20:21	6	11	17:18:40	4	4	17:19:32	3	5
17:21:08	6	1	17:22:15	11	14	17:20:32	7	3	17:21:26	3	3
17:23:09	0	3	17:24:20	8	11	17:22:33	8	3	17:23:28	9	12
17:25:16	6	6	17:26:28	11	13	17:24:40	0	4	17:25:38	10	20
17:27:25	3	2	17:28:25	6	13	17:26:47	6	1	17:27:34	7	13
17:29:16	4	0	17:30:11	13	15	17:28:41	4	3	17:29:21	3	8
17:31:08	5	0	17:32:13	7	11	17:30:32	6	3	17:31:24	6	11
17:32:59	8	3	17:34:17	10	15	17:32:23	9	1	17:33:28	11	12
17:35:13	3	5	17:36:17	7	12	17:34:14	4	4	17:35:28	10	16
17:37:05	5	1	17:38:13	9	14	17:36:27	7	4	17:37:21	6	8
17:39:14	2	1	17:40:23	7	11	17:38:39	7	3	17:39:35	7	10
17:41:09	7	2	17:42:24	6	8	17:40:32	4	2	17:41:32	8	10
17:43:00	0	1	17:43:59	10	13	17:42:24	3	1	17:43:08	9	8
17:44:57	3	3	17:46:11	9	11	17:44:22	1	0	17:45:22	8	9
17:47:07	4	7	17:48:23	10	13	17:46:30	3	2	17:47:33	11	11
17:49:21	5	6	17:50:30	9	12	17:48:44	2	2	17:49:41	8	12
17:51:24	4	3	17:52:26	9	11	17:50:49	2	1	17:51:36	8	8
17:53:13	5	1	17:54:26	10	13	17:52:37	9	1	17:53:37	9	11
17:55:23	6	1	17:56:26	3	9	17:54:47	5	3	17:55:36	3	11
17:57:16	2	5	17:58:21	5	10	17:56:41	4	2	17:57:31	4	5
17:59:00	2	0	17:59:56	13	12	17:58:24	4	3	17:59:06	4	9

Table 4-6: A28 Canterbury Rd/St Mildreds Rd/Minster Rd PM Peak – Queue Lengths (Vehicles)

Junction 6 – A28 Canterbury Rd/Garlinge High St

4.2.41 The A28 Canterbury Road/Garlinge High Street provides access to Garlinge from the A28 corridor and is located further east along this study corridor. The southern end of Garlinge High Street meets Shottendane Road, like Minster Road as detailed in the previous junction, and these roads run roughly parallel to each other.

Observed Turning Movements

4.2.42 The peak hour turning movements are shown in Figure 4-7.

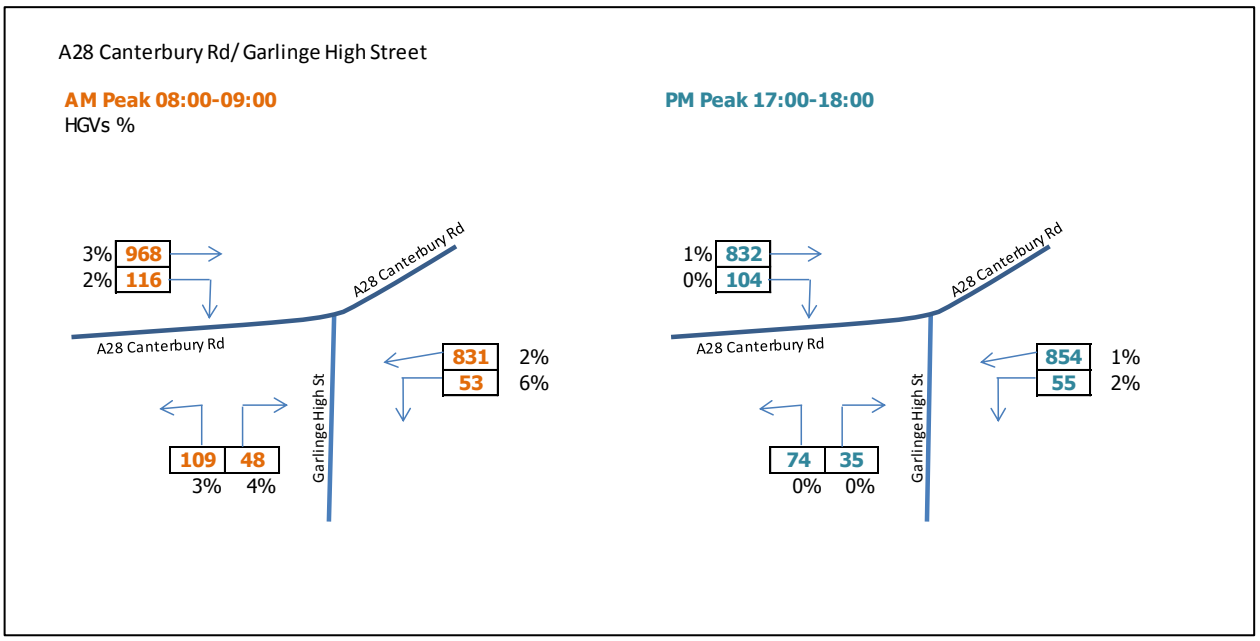

Figure 4-7: A28 Canterbury Rd/Garlinge High St – Turning Movements (Vehicles)

4.2.43 In the AM peak hour, the A28 traffic flow is over 1,000 vehicles in the eastbound direction heading towards Margate and closer to 900 vehicles travelling westbound. There are 116 vehicles that turn right into Garlinge High Street from the eastbound A28 and 48 vehicles which turn right out of Garlinge High Street towards Margate. There are around 50 vehicles that turn into Garlinge High Street from the westbound A28 and 109 vehicles turn left, westbound, onto the A28.

4.2.44 In the PM peak, the A28 eastbound flow is around 100 vehicles lower than in the AM, with over 900 vehicles travelling towards Margate. The westbound flow is around 900 vehicles. There are similar flows turning from the A28 into Garlinge High Street but the flow turning out onto the A28 is lower than observed in the AM peak.

Observed Queue Lengths

4.2.45 Table 4-7 displays the queue length survey results for the A28 Canterbury Road/ Garlinge High Street priority junction. The queues in Lane 2 of the A28 Canterbury Road east and Lane 1 of Canterbury Road west occur at the pedestrian crossing. The table suggests there are very short queues on all arms of this junction in both the AM and PM peak hours.

	A28 Canterbury Rd E		Garlinge High St		A28 Canterbury Rd W	
	Lane 1	Lane 2	Lane 1	Lane 2	Lane 1	Lane 2
08:00-08:05	1	5	2	2	7	1
08:05-08:10	0	4	1	1	9	1
08:10-08:15	0	3	1	1	1	5
08:15-08:20	0	4	1	1	5	3
08:20-08:25	0	6	2	0	2	0
08:25-08:30	0	5	2	1	4	3
08:30-08:35	1	2	1	1	3	4
08:35-08:40	1	1	3	3	4	2
08:40-08:45	1	3	3	1	5	3
08:45-08:50	2	4	4	2	5	2
08:50-08:55	0	0	3	1	0	2
08:55-09:00	1	4	1	1	6	1
Total	**7**	**41**	**24**	**15**	**51**	**27**
17:00-17:05	0	3	1	1	0	1
17:05-17:10	1	5	2	2	2	3
17:10-17:15	1	5	3	2	2	4
17:15-17:20	0	2	2	1	2	3
17:20-17:25	0	5	4	2	0	2
17:25-17:30	0	7	1	1	2	2
17:30-17:35	0	1	1	1	2	1
17:35-17:40	0	0	3	2	0	1
17:40-17:45	0	1	2	0	1	1
17:45-17:50	0	0	2	2	0	1
17:50-17:55	1	0	2	3	0	2
17:55-18:00	1	0	1	1	2	2
Total	**4**	**29**	**24**	**18**	**13**	**23**

Table 4-7: A28 Canterbury Rd/Garlinge High St – Queue Lengths (Vehicles)

Junction 7 – A28 Canterbury Rd/George V Ave/Maynard Ave

4.2.46 The A28 Canterbury Road/ George V Avenue/ Maynard Avenue priority junction is located in Westbrook. George V Avenue provides access towards Hartsdown and on to Victoria traffic lights. This route provides access to other parts of Thanet whilst avoiding the centre of Margate. Maynard Avenue is a residential road and provides access to Garlinge.

Observed Turning Movements

4.2.47 The peak hour turning movements are shown in Figure 4-8.

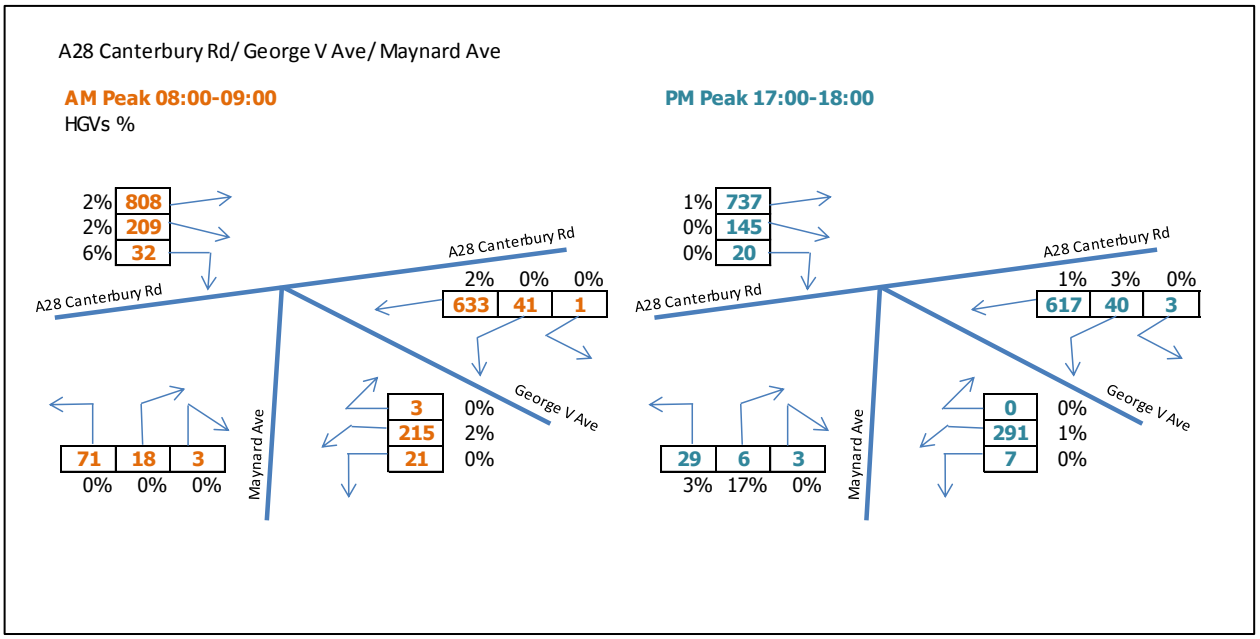

Figure 4-8: A28 Canterbury Rd/George V Ave/Maynard Ave – Turning Movements (Vehicles)

4.2.48 In the vicinity of this junction, the A28 Canterbury Road eastbound flow is over 1,000 vehicles in the AM peak hour, and of these over 200 vehicles turned right into George V Avenue. There were also just over 200 vehicles turning left out of George V Avenue onto the westbound A28. Very few vehicles turned right out of George V Avenue eastbound on the A28 and again very few turned left from the westbound flow of traffic on the A28. This can be explained by George V Avenue running diagonally from the A28 and earlier opportunities for westbound traffic to turn off of the A28 through adjoining roads between the A28 and George V Avenue.

4.2.49 Eastbound flows on the A28 are about 100 vehicles lower in the PM peak however the pattern of movements at this junction during this peak hour is very similar to the AM peak hour.

Observed Queue Lengths

4.2.50 Table 4-8 displays the queue length survey results for the A28 Canterbury Road/ B2052 George V Ave priority junction.

	A28 Canterbury Rd E	B2052 George V Ave	Maynard Ave	A28 Canterbury Rd W (Right Turn)
	Lane 1	Lane 1	Lane 1	Lane 1
08:00-08:05	0	17	2	14
08:05-08:10	0	16	2	9
08:10-08:15	0	12	2	11
08:15-08:20	0	12	2	10
08:20-08:25	0	15	2	5
08:25-08:30	0	17	5	5
08:30-08:35	0	6	2	7
08:35-08:40	0	13	3	7
08:40-08:45	0	10	2	3
08:45-08:50	0	0	0	0
08:50-08:55	0	4	4	1
08:55-09:00	0	16	3	6
Total	**0**	**138**	**29**	**78**
17:00-17:05	0	23	3	10
17:05-17:10	0	21	2	20
17:10-17:15	3	25	2	5
17:15-17:20	0	22	4	8
17:20-17:25	0	19	2	5
17:25-17:30	0	20	0	10
17:30-17:35	1	20	2	9
17:35-17:40	0	7	2	6
17:40-17:45	0	22	1	8
17:45-17:50	0	8	2	6
17:50-17:55	0	24	0	4
17:55-18:00	0	15	0	7
Total	**4**	**226**	**20**	**98**

Table 4-8: A28 Canterbury Rd/George V Ave/Maynard Ave – Queue Lengths (Vehicles)

4.2.51 The table highlights that there are long queues on the B2052 George V Ave in both the AM and PM peak hours, with longer queues in the PM peak. In the AM peak queues are consistently between 10 to 19 vehicles and in the PM peak queues are consistently between 20-29 vehicles. Queueing occurs on the A28 Canterbury Road west arm of this junction due to the right turning vehicles into B2052 George V Avenue or Maynard Avenue. During one five minute interval in the PM peak hour queueing reached 20 vehicles.

Junction 8 – A28 Canterbury Rd/A28 Marine Terrace/Station Approach

4.2.52 The A28 Canterbury Road/A28 Marine Terrace/Station Approach junction is an oversized 4-arm roundabout junction with a merge required from vehicles wishing to enter the A28 mainline eastbound flow at the northern extent of the junction. The junction provides access to Margate railway station and car park. The A28 Marine Terrace heads east into Margate town centre along the seafront. All Saints' Avenue heads south away from Margate meeting Tivoli Park Avenue and on to the B2052 and the one way system near the Victoria traffic lights at the southern extent of Margate.

Observed Turning Movements

4.2.53 The peak hour turning movements are shown in Figure 4-9.

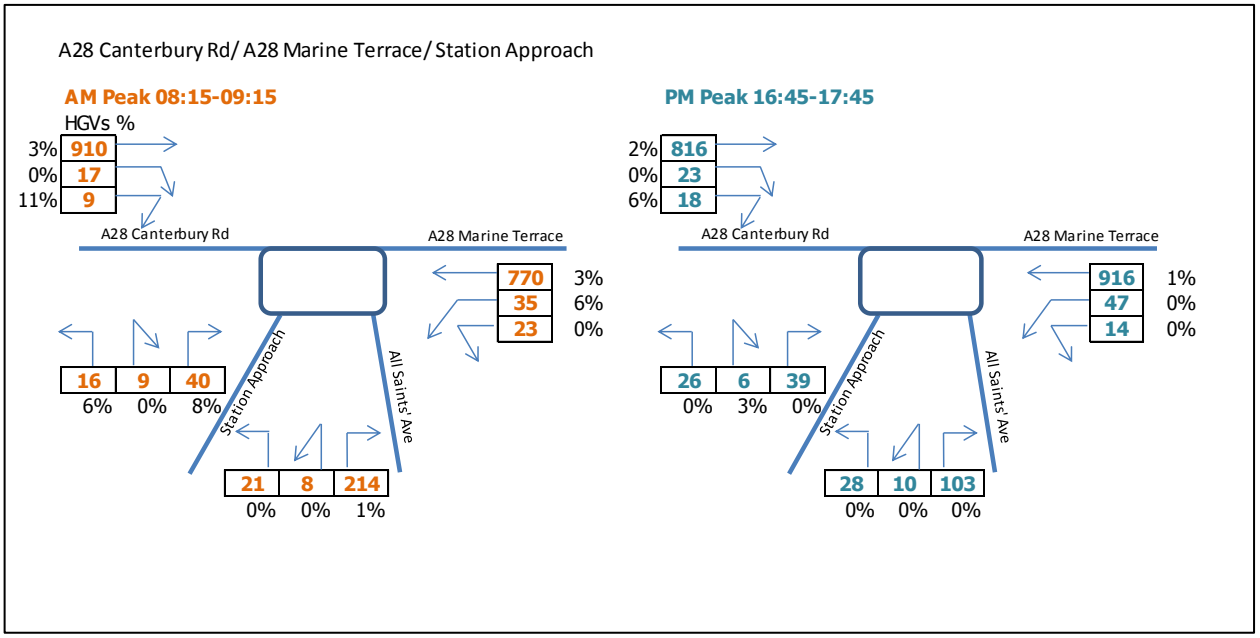

Figure 4-9: A28 Canterbury Rd/A28 Marine Terrace/Station Approach – Turning Movements (Vehicles)

4.2.54 The predominant flow at this junction is on the A28 Canterbury Road/Marine Terrace. In the AM peak there are nearly 1,200 vehicles heading eastbound onto Marine Terrace. Westbound there are nearer 800 vehicles entering Canterbury Road. There are over 200 vehicles turning from All Saints' Avenue towards Marine Terrace.

4.2.55 In the PM peak hour, the flow on the A28 is much more balanced with 958 vehicles heading eastbound towards Marine Terrace and 970 vehicles heading westbound to Canterbury Road. There is approximately half the flow making the movement from All Saints' Avenue to Marine Terrace in the PM peak. All other flows at this junction are very low and remain very similar in both the AM and PM peak hours.

Junction 9 – A28 Marine Terrace/A254 Marine Terrace/Marine Drive

4.2.56 The A28 Marine Terrace meets the A254 at this junction, located on Margate seafront. Less than 50 metres east of this junction, the A254 heads south away from Margate town centre and towards Victoria traffic lights and beyond to Westwood. Marine Drive follows the seafront north east providing access to the Old Town of Margate and on towards Cliftonville.

Observed Turning Movements

4.2.57 The peak hour turning movements are shown in Figure 4-10.

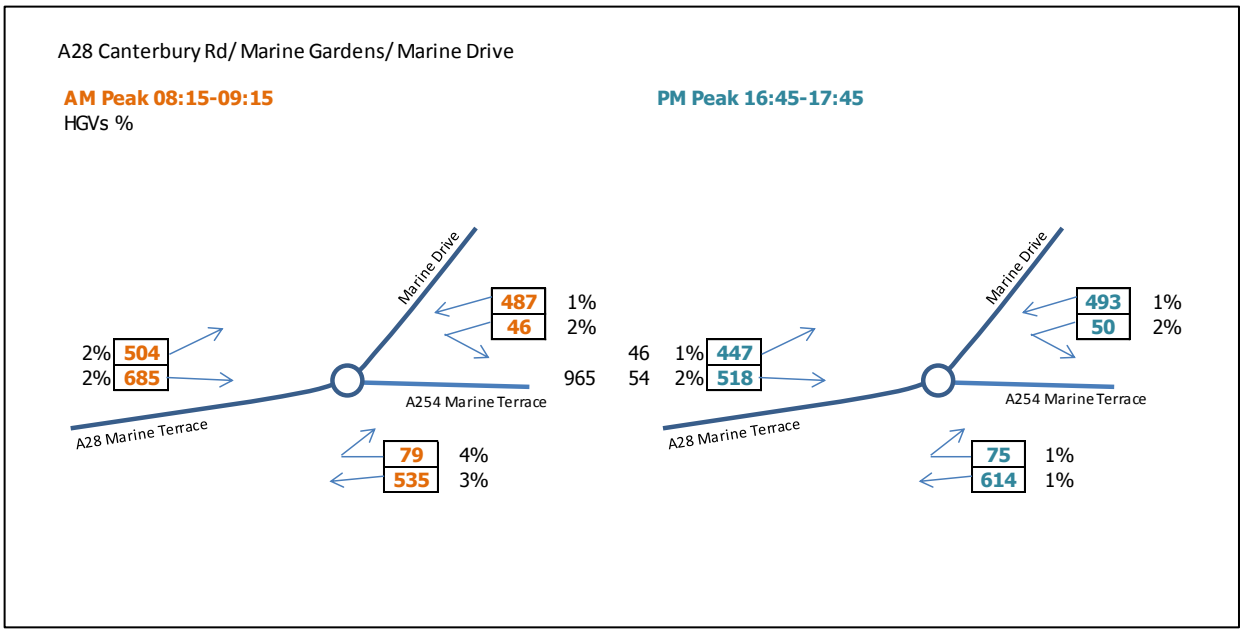

Figure 4-10: A28 Marine Terrace/A254 Marine Terrace/Marine Drive – Turning Movements (Vehicles)

4.2.58 In both the AM and PM peak the eastbound A28 Marine Terrace flow splits at this junction with just over half of the flow turning right to A254 Marine Terrace and just under half turning left to Marine Drive. This is also reflected in the westbound flow towards Marine Terrace; over half of the flow comes from A254 Marine Terrace and under half comes from Marine Drive.

Observed Queue Lengths

4.2.59 Table 4-9 displays the queue length survey results for the junction. The most significant queueing was observed in Lane 2 of Marine Drive in both the AM and PM peak hours. For more than half of the peak hour queues were over 15 vehicles reaching a maximum of 34 vehicles. Some queueing occurred in Lane 1 of the A254 Marine Terrace with just over 10 vehicles in four consecutive five-minute intervals.

4.2.60 In the PM peak, queueing in Lane 2 of Marine Drive was over 20 vehicles for half of the peak hour, and reached over 30 vehicles for two consecutive five-minute intervals. Longer queues were observed in Lane 1 of the A254 Marine Terrace arm in the PM peak than in the AM peak. Occasional spikes of over 10 vehicles occurred and four consecutive five-minute intervals observed queues longer than 20 vehicles, between 17:10 and 17:30.

	Marine Drive	**A254 Marine Terrace**		**A28 Marine Terrace**	
	Lane 1	Lane 1	Lane 2	Lane 1	Lane 2
08:15-08:20	9	4	1	1	0
08:20-08:25	15	7	2	1	2
08:25-08:30	27	10	2	1	4
08:30-08:35	18	11	3	0	0
08:35-08:40	27	12	1	3	2
08:40-08:45	28	11	1	2	4
08:45-08:50	34	7	2	5	2
08:50-08:55	32	8	1	7	2
08:55-09:00	17	5	2	4	4
09:00-09:05	4	5	2	2	5
09:05-09:10	8	2	2	2	0
09:10-09:15	12	2	0	1	5
Total	**231**	**84**	**19**	**29**	**30**
16:45-16:50	18	10	2	1	1
16:50-16:55	26	8	1	5	1
16:55-17:00	21	6	2	1	1
17:00-17:05	22	5	2	2	2
17:05-17:10	31	10	3	2	1
17:10-17:15	32	20	1	6	6
17:15-17:20	29	26	2	2	2
17:20-17:25	28	28	1	0	1
17:25-17:30	8	20	1	1	1
17:30-17:35	9	6	2	2	3
17:35-17:40	17	18	2	5	1
17:40-17:45	8	7	1	1	2
Total	**249**	**164**	**20**	**28**	**22**

Table 4-9: A28 Marine Terrace/Marine Gardens/Marine Drive – Queue Lengths (Vehicles)

4.3 Link Capacity

4.3.1 As before, an indication of the current conditions in terms of link capacity at certain points within the study corridor can be identified using the Design Manual for Roads and Bridges (DMRB) and existing one-way traffic flows.

4.3.2 The roads through the A28 corridor can be categorised using the DMRB volume 5 TA 79/99. This classification and the road width then determine a theoretical capacity to compare against flows. An extract of the relevant section of the DMRB providing a description of the different road classifications is shown in Figure 4-11. These guidelines are seen as a relevant indicative tool for assessing capacity.

	UM	UAP1	UAP2	UAP3	UAP4
General Description	Through route with grade separated junctions, hardshoulders or hardstrips, and motorway restrictions.	High standard single/dual carriageway road carrying predominantly through traffic with limited access.	Good standard single/dual carriageway road with frontage access and more than two side roads per km.	Variable standard road carrying mixed traffic with frontage access, side roads, bus stops and at-grade pedestrian crossings.	Busy high street carrying predominantly local traffic with frontage activity including loading and unloading.
Speed Limit	60mph or less	40 to 60 mph for dual, & generally 40mph for single carriageway	Generally 40 mph	30 mph to 40 mph	30mph

Figure 4-11: DMRB TA 79/99 road classifications

4.3.3 Three locations within the corridor have been identified as follows:

1. A28 to SW of junction with Park Lane, Birchington;
2. A28 to West of junction with High Street, Garlinge; and
3. A28 to West of junction with marine Drive, Margate.

Figure 4-12: A28 Link Capacity - Site 1 (©2017 Google)

4.3.4 Site 1 has been difficult to classify and has been considered in both UAP3 and UAP4 categories with a road width of 6.75 metres. The road has a speed limit of 30mph. The characteristics of this section of the corridor are shown in Figure 4-12.

4.3.5 Sites 2 and 3 are considered to fall within the UAP3 category with road width of 7.3 metres. Both sites have frequent side roads and frontage accesses and a speed limit of 30mph. The characteristics of these sections of the corridor are shown in Figure 4-13 and Figure 4-14.

Figure 4-13: A28 Link Capacity - Site 2 (©2017 Google)

Figure 4-14: A28 Link Capacity - Site 3 (©2017 Google)

4.3.6 The theoretical link capacity at each of the 3 sites has been compared with the worst case one-way peak hour flow to provide an indication of the current operation of the links. These comparisons are shown in Table 4-10.

	Road Type	Carriageway Width (m)	Theoretical capacity (one-way)	Max Hourly flow (one-way)	Ratio of flow/capacity
Site 1	UAP3	6.75	1110	960 (AM/WB)	0.86
	UAP4	6.75	900	960	1.06
Site 2	UAP3	7.3	1300	1084 (AM/EB)	0.83
Site 3	UAP3	7.3	1300	1189 (AM/EB)	0.91

Table 4-10: A28 Corridor – Indicative Link Flow/Capacity

4.3.7 The above table indicates that the sites along the A28 corridor are approaching the theoretical capacity of the links; particularly on the 'busy' (bus/pedestrian/vehicle interaction) link around Site 1 approaching Birchington Square.

4.4 Average Journey Times

4.4.1 Average journey times through the corridor have been established using the Basemap software 'Highways Analyst'. Average link times were calculated for the route through the corridor in both directions for the AM peak (0800 – 0900) and PM peak (1700 - 1800) peaks; and for an overnight period[5] assumed to reflect free-flow conditions.

4.4.2 By comparing journey times during free flow and peak times scenarios the average level of delay observed during peak periods has been established.

4.4.3 The journey time corridor used for this calculation is that shown in Figure 1-2, from the A299 Thanet Way/A2 Canterbury Road roundabout junction near St Nicholas-at-Wade to the A28 Marine Terrace/Marine Drive junction on Margate seafront.

4.4.4 Table 4-11 displays the journey times across the length of the study area, for both eastbound and westbound directions.

Direction	Distance (kms)	AM (mm:ss)	PM (mm:ss)	Free Flow* (mm:ss)	Delay	
					AM	PM
EB	9	13:58	13:33	09:47	04:10	03:46
WB	9	13:40	12:49	09:49	03:51	03:00
Total					08:01	06:46

Table 4-11: A28 Corridor – Average Journey Times and Delay

4.4.5 The table shows that more delay is observed during the AM peak hour observes more delay in both directions of travel. Compared to the free flows times across this network, the AM peak approximately adds four minutes to a journey of approximately ten minutes through the corridor. This is a level of delay which becomes notable, as it adds almost an additional half of the journey time of this route from the edge of the district through the Westwood shopping area and into the conurbation.

4.4.6 Given that the link capacity of the A28 near Birchington Square is close to being reached, it is expected that anything other than a slight increase in traffic flows could have a significant impact on journey times, and journey time reliability.

4.5 Highway Safety Record

4.5.1 Personal Injury Crash records (PICs) have been analysed for a 5 year time period between 1st April 2011 and 31st March 2016. The analysis of reported PICs has been undertaken for the 9 km (5.7 mile) A28 study area between the junction with A299

[5] Typically 1am to 5am but extended where data was unavailable between these times.

Thanet Way and the A254 Marine to assist in the identification of existing issues and problems on A28.

4.5.2 An initial review of the data for the study area identified that there were a total of 164 PICs during the 5 year time period. Of these, 2 (1%) were Fatal and 27 (16%) were classified as Serious incidents. The remaining 135 (82%) of PIAs were deemed to be Slight in severity.

4.5.3 Table 4-12 below shows the number of crashes by severity for each yearly period running from April to March and Figure 4-15 shows the locations of these PICs.

	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016
Slight	22	19	33	35	26
Serious	3	8	4	5	7
Fatal	1	0	1	0	0

Table 4-12: A28 Corridor - PIC Crashes by Year and Severity[6]

Figure 4-15: A28 Corridor – All PICs by Severity

[6] Yearly periods run from the April to March of the following year.

4.5.4 The two fatal crashes occurred to the east of St Nicholas roundabout, before Brooksend Hill, on the dual carriageway section of the A28. They involved vehicles crossing the central grass verge.

Vulnerable Road Users

4.5.5 Table 4-13 shows the total number of injuries sustained by vulnerable road users and Figure 4-16 shows the locations of these PICs.

	Severity	2011 to 2012	2012 to 2013	2013 to 2014	2014 to 2015	2015 to 2016	Total
Pedestrians	Slight	3	2	5	5	4	**19**
	Serious	1	4	1	2	2	**10**
Cyclists	Slight	0	2	1	5	3	**11**
	Serious	0	1	1	0	1	**3**
Motorcyclists	Slight	2	3	3	5	3	**16**
	Serious	1	4	1	1	3	**10**
Mobility Scooters	Slight	0	0	1	0	0	**1**
Total		**7**	**16**	**13**	**18**	**16**	**70**

Table 4-13: A28 Corridor – Vulnerable Road User PICs

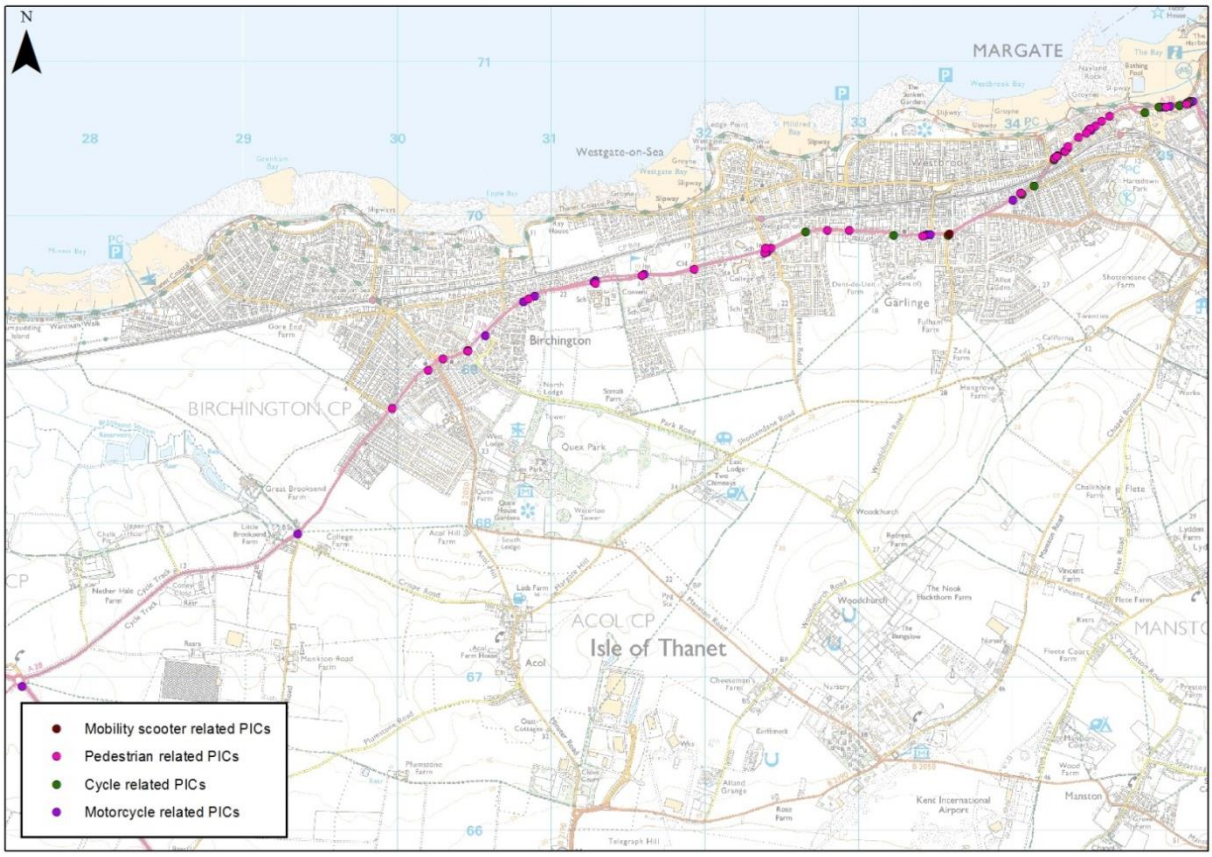

Figure 4-16: A28 Corridor - Vulnerable Road User PIC Locations

4.5.6 64 of the total number of PICs within the study corridor involved a pedestrian, cyclist, mobility scooter user or a motorcyclist and at least one other motor vehicle. A further 6 incidents were reported which involved a pedestrian, cyclist, mobility scooter user or a motorcyclist but did not involve any other motorised vehicles.

4.5.7 It should be noted that a small section of the route has a large majority of the incidents involving vulnerable road users. The 0.7 mile stretch between Rancorn Road and Marine Gardens has observed the following:

- 13 (45%) of the 29 pedestrian related incidents occurred in this stretch, of these 6 were serious incidents and 7 were slight;
- 8 (57%) of the 14 cycle related incidents, of which 2 were serious and 6 were slight; and
- 13 (50%) of the 26 motorcycle related incidents of which 5 were serious and 8 were slight.

Summary

4.5.8 The highest concentration (46%) of PICs relating to vulnerable road users are found to have occurred on the 0.7 mile stretch of the route between Rancorn Road and Marine

Gardens with both these junctions showing relatively high accident numbers.

4.5.9 In terms of incidents involving motorised vehicles the 0.7 mile stretch of the route between Rancorn Road and Marine Gardens also has a high proportion (29%) of the total number of PICs involving non vulnerable road users.

4.5.10 St Nicholas's Roundabout accounts for 13% of all PICs recorded in the study period.

Comparison with National Values

4.5.11 An annual crash rate has been calculated based on the observed crashes and using Annual Average Daily Flow (AADF) values as taken from the DfT website. The crash rate is based upon a weighted average AADF and route length. Table 4-14 shows the average total route length, the average AADF and calculated crash rate.

	Start Junction	End Junction	Distance (m)	KM	AADT Count	No Accidents	Accidents per year	Annual no Cars	Annual Distance Travelled (km)	Million kms of Travel	Accident Rate
1-3	A299	B2055	9000	9.000	19216	164	32.8	7013905	63125144	63.1	**0.52**

Table 4-14: A28 Corridor – Annual Average Crash Rate

4.5.12 An average annual crash rate of 0.52 has been calculated for this route. This rate has been compared to the value reported in WebTAG COBALT data tables for type 8 roads (Older S2 A Roads, 30/40mph) which gives a crash rate of 0.863 PICs per million vehicle kilometres travelled.

4.5.13 This suggests that the A28 has a lower than average crash rate. However it should be noted that this is an average across a 9 km route and there will be areas where this value is higher. In particular it should be noted that the section of the route from Rancorn Road and Marine Gardens has a particularly high accident rate when compared to the rest of the route.

4.6 Summary

4.6.1 In summary, the collated data indicates that the A28 corridor generally operates with moderate levels of queueing and delay. There are locations where design link capacity is close to saturation; as such increases in traffic demand on this corridor could potentially disproportionately impact on journey times and delay.

4.6.2 A number of junctions observe some level of peak hour queueing and delay. In particular the A28 Canterbury Rd/St Mildreds Rd/Minster Rd, the combined Birchington Square/Park Lane junctions, A28 Canterbury Rd/George V Ave/Maynard Ave, and A28 Marine Terrace/Marine Gardens/Marine Drive all observe more significant queueing during one or more of the weekday peak periods. At least one approach at all of these junctions observes queues in excess of 20 vehicles which suggest existing capacity issues are present.

4.6.3 In terms of highway safety there are clusters of crashes at some of the key junctions, in particular the section of the route through Margate has observed a high number of PICs. In addition, two fatal accidents have occurred on the more rural eastern end of the route. However, in general the route is considered to have a lower than average annual crash rate.